King County METRO

KING COUNTY
WATERBORNE TRANSIT POLICY STUDY

Task 3: Operating, Financing, and Partnership Options

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in association with Elliott Bay Design Group • Jacobs Civil • Mirai Associates • Progressions

TABLE OF CONTENTS

1. INTRODUCTION

King County Metro, as part of the update to the Six-Year Transit Development Plan, developed a work program to determine under what conditions and circumstances it may be appropriate for King County to invest and/or participate in passenger-only ferry service. The IBI Group team is currently assisting King County Metro staff in undertaking the *Waterborne Transit Policy Study,* with the objectives of assessing the feasibility of different models for King County's potential involvement in waterborne transit, developing objective criteria than can be used to assess route options, and evaluating sample route scenarios in the market areas of Seattle to Vashon, Downtown Seattle to West Seattle, and across Lake Washington and Lake Union to form the basis for King County policy regarding the provision of waterborne transit.

This Task 3 technical memorandum builds on the work of Task 2, which summarized the findings of previous studies relevant to passenger-only ferries in the Puget Sound region and the experience of other ferry operating entities throughout the region and the world to identify significant issues and best practices. The purposes of this *Task 3 – Operating, Financing and Partnership Options* paper are to:

1. Identify potential operating, financing and partnership options that could be considered for waterborne transit services in King County.

2. Identify potential King County, public agency, and private operator roles and participation options.

The intent of this paper is to identify the range of options for each component of waterborne transit, group key options into potential service delivery systems, and provide a preliminary assessment of the implications and the likely feasibility of each service delivery system for King County.

1.1 Methodology

The findings from Task 2 and consultant experience were the starting points for the identification of the key components of a waterborne transit system and the range of potential service delivery system options. These initial directions were refined and expanded upon through input from two Stakeholder Meetings held in early March. The meetings were attended by approximately 60 people, representing the maritime industry, waterfront communities in King County, and agencies and organizations dealing with transportation issues. The various operating, financing, and partnership options were then further elaborated using the knowledge of the consultant team to create this technical memorandum. This paper is composed of four main sections:

1. The first section, COMPONENTS, focuses on the five components of a waterborne transit system: *Entities and Potential Roles*, *Facilities*, *Vessels*, *Operations*, and *Revenue Sources and Financing Approaches*. The elements of each component, and the options for each element, are identified. This section is intended to provide an introduction to all options, as the appropriateness of any one option typically cannot be evaluated except in reference to a particular route. This section will serve as a reference and guide for use during Tasks 4 and 5, and in future definition of proposed routes.

2. The second section, SERVICE DELIVERY SYSTEM OPTIONS, defines four service delivery options based on the degree and type of public-private partnership. These options range from fully private operation, through two variations of public-private collaboration, to fully public

operation. The options are defined by the fundamental elements of Entities and Potential Roles, Facilities, Vessels, Operations, and Revenue Sources and Financing Approaches that are appropriate to each option.

3. The third section, ASSESSMENT OF OPERATING MODELS, explores the advantages, disadvantages, and implications of each service delivery option for King County. This is a high level assessment, primarily identifying the key issues that would need to be addressed if a potential route were to move forward utilizing any of the identified service delivery system options.

4. The fourth section, SUMMARY, provides a high level comparison of the four service delivery system options.

In addition, three appendices are attached. The first is a guide to public passenger ferry revenue sources that are locally available (state and federal grants are not included). Sources include new county taxes, ferry districts, and local partnerships. The following two appendices are from the Stakeholder Meetings. The first is a summary of the stakeholder input and the second is a complete list of all stakeholder comments.

2. COMPONENTS

A waterborne transit system can be better understood by focusing on its five essential components. The first component, *Entities and Potential Roles*, characterizes the organizations involved in the authorization and provision of service, and the respective roles they can take. The second and third components, *Facilities* and *Vessels*, deal with the physical elements required to provide service. The fourth component*, Operations*, covers the schedule and organizational aspects of the day-to-day running of the service. The fifth component, *Revenue Sources and Financing Approaches*, identifies the potential sources of capital and operating funds, organized by their accessibility to public and private operators. For each component, the range of potential options is defined. Which of those options might be appropriate for inclusion in potential waterborne transit in King County will begin to be identified in the Service Delivery System Option section of this report.

2.1 Entities and Potential Roles

Entities and Potential Roles is the component that defines the different potential participants in the provision of waterborne transit in the Puget Sound area. The component also includes identification of each entity's legal authority for establishment of a waterborne transit service delivery system and control over the manner in which policy is made, including revenue generation and program delivery.

2.1.1 CURRENT ENVIRONMENT

There are three arrangements of decision-making authority and entity roles in use for passenger-only ferry operations currently serving King County destinations: state owned and operated, King County owned and private contractor operated, and public-private joint development agreements between Kitsap Transit and two private operators.

2.1.1.1 State of Washington

The State of Washington, through Washington State Ferries (WSF), operates a passenger-only ferry service between Vashon and Downtown Seattle. Policy making authority for WSF was historically vested in the Washington Transportation Commission, an independent Commission appointed by the Governor and subject to Senatorial confirmation. As of July 1, 2005, the Department of Transportation has become a code agency with its Secretary appointed by and reporting to the Governor. The Transportation Commission has become a policy board and has no supervisory or oversight role for the Department of Transportation. The Commission continues its responsibility for adoption of a tariff schedule for WSF and tolls for any state highway or bridge project utilizing tolls. The budget submittal for transportation is now part of the Governor's budget request. Washington State Legislature is the funding authority for WSF and has historically also played a significant role in policy making.

2.1.1.2 King County

King County contracts for the complete Elliott Bay Water Taxi service, originating from the City of Seattle owned Seacrest Dock in West Seattle to operator provided Pier 55 in Downtown Seattle. Policy-making and funding authority for the water taxi program resides with the King County Council. The water taxi service is administered through King County Metro.

2.1.1.3 Kitsap Transit Benefit Area

The statutory powers of the Kitsap Transit Benefit Area empower Kitsap Transit to enter into joint development agreements. Kitsap Transit has used this authority with two private ferry companies

operating under certificates of public convenience and necessity from the Washington Utilities and Transportation Commission. The joint development agreements define the policy making, funding, asset provision and operational decision making authority for both Kitsap Transit and the private ferry companies. The program is collaborative with Kitsap Transit responsible for providing some of the terminal and docking facilities and the private operators responsible for the costs of vessel acquisition and service operations. Minimum service schedules and certain other operational program requirements including successorship are defined in the joint development agreement.

2.1.2 ENTITIES AND POTENTIAL ROLES COMPONENT ELEMENTS

Both public and private entities may have involvement in waterborne transit to varying degrees, from authorizing the creation of a service to direct operation. Private entities are regulated by governmental entities with relevant regulatory authority, such as the Washington Utilities and Transportation Commission. Public entities may authorize or manage waterborne transit services using their powers of legislative and executive authority. For this purpose, legislative authority is defined as the power to set policy, promulgate law through statute, ordinance or code, authorize spending and establish taxation policy; executive authority is defined as the power to implement programs, administer laws, recommend budgets and enter into contractual arrangements; and regulatory authority is defined as the power to control access to scarce public resources or to control industries of significant importance to citizens such as utilities, pipelines and commercial ferries.

2.1.2.1 Public Entities

Four classes of government entities could potentially be involved in waterborne transit in the King County area: state, regional, county / local, public transit benefit area, county ferry district, and utilities & transportation commission. For each entity, the mechanisms of legislative and executive authority are explained, as well as the implications of the exercise of those authorities in the provision of waterborne transit in King County.

Washington State

Under a state governance structure, the Washington State Legislature is the legislative authority. The State legislature is composed of ninety-eight representatives and forty-nine senators from the 49 legislative districts in Washington, 17 of which are located all or in part in King County.

Effective July 1, 2005 the Washington State Department of Transportation has become a code agency with its Secretary appointed by and reporting to the Governor. The Washington State Transportation Commission, the members of which are appointed by the State's Governor subject to senatorial approval, has become a policy board but still retains its authority to set a schedule of tariffs for Washington State Ferries.

If the decision-making authority of a proposed passenger-only ferry service were to rest with the State, the cost of the service would not be borne directly by King County taxpayers but the options for how the service might be accomplished would be constrained:

- The Washington State ferry system's employment practices are established in law and adjudicated by the Marine Employees Commission (MEC). This structure essentially precludes the option of contracting private ferry operational components or a joint development agreement with a commercial ferry operator.

- Selection of a state governance structure would likely also preclude meaningful private asset financing. However, the state does have the power to bare boat charter vessels and has in the past used this option with private operators.
- The state governance option may also reduce King County's ability to direct the development or provision of waterborne transit services within its service area because legislative and executive authority would rest outside the County. A state waterborne transit program is subject to both policy direction and appropriation by the legislature.

Regional

Regional structures vest their legislative authority in a policy board or council composed of either appointed elected officials or by directly elected members from the geographic region and/or jurisdictions served.

A regional governance structure places executive authority in a mission specific regional program organization. The executive duties exercised by this organization are under the oversight of the legislative body.

If the decision-making authority of a proposed passenger-only ferry service were to rest with a regional governing body, the following implications would be likely:

- A new regional governance structure would require the State Legislature to enact a statutory authority. The existing Regional Transit Authority (Sound Transit) did provide some financial support for the Elliott Bay Water Taxi, but may be reluctant to expand its core mission to add waterborne transit.
- A regional structure may reduce King County's real or perceived ability to direct development and operation of waterborne transit services for its citizens.
- A regional structure may allow various local jurisdictions to share responsibility for asset accumulation and operation and effectively leverage State and Federal grant sources.
- King County residents might expect to be taxed through a general taxing mechanism to support passenger-only ferry service.

County / Local

A county or local governance system would place legislative authority in an existing legislative body such as the King County Council. Under the county or local structure, two or more jurisdictions can collaborate to offer waterborne transportation through some form of interagency agreement that would leave legislative authority with the respective existing county or local legislative bodies. In effect, the separate legislative bodies must agree to common terms through the adoption of the binding agreement. Additionally, a local jurisdiction could enter into an agreement with a private operator while maintaining the existing local governance structure.

Executive authority is placed within an existing transportation agency or newly created transit agency under the auspices of county or local government. As noted above, two or more local governments may collaborate to offer waterborne transit services through an interagency agreement that specifies the program implementation responsibilities to

be discharged by the respective executive agencies. Public organizations might also enter into an agreement with a commercial operator while not forgoing their executive accountability functions. The agreements executed can contain clauses to ensure adequate, safe, and responsive service for the customers of the service.

If the decision-making authority of a proposed passenger-only ferry service were to rest with a county or local government, the following would be likely implications:

- Given the regional aspect of ferry service into Downtown Seattle, a county governance structure alone may not be adequate to command the necessary capital assets and some form of interagency agreement may be required to secure those necessary assets such as docking and terminal facilities.
- A local governance structure may not lead to the effective use of scarce state and federal resources. Multiple ferry systems within the Puget Sound region may compete for the same state and federal resources without a comprehensive regional investment plan.
- A local governance structure, without supplementing interagency agreements, may restrict the ability to share the cost of technology advancement and physical asset development and construction.
- King County residents might expect to be taxed through a general taxing mechanism to support passenger-only ferry service.

Public Transportation Benefit Area (PTBA)

The legislative authority of the Public Transportation Benefit Area, a policy board of elected officials from the respective county and cities within the PTBA, has or can acquire the authority to enter into waterborne transit services. In addition, it has the ability to structure interagency agreements and contract for public or private service providers.

The PTBA framework, a legislative authority, creates a transit organization to implement the administrative, operational, and capitalization components of a waterborne transit service. This organization, if so directed by the legislative body, can provide or contract for waterborne transit services and integrate the service delivery with its existing transportation network.

Two potential methods for King County to establish a PTBA or equivalent authority for passenger-only ferry service are identified below:

- Theoretically, a PTBA could be formed in King County to administer and fund waterborne transit service using powers granted to counties in RCW 36.57A. This statute was amended during the 2003 Session to define how a PTBA may provide passenger-only ferry services and allowable revenue sources. However, the process of establishing a PTBA is cumbersome and its taxing authority to operate passenger ferry service would be severely limited if the PTBA boundaries included area within the Regional Transit Authority (Sound Transit) boundary. RCW 82.80.130 and 82.14.440 prohibit the PTBA with area in

a RTA district from collecting Motor Vehicle Excise Tax (MVET), or Sales and Use Tax. That would leave the collection of fares, licensing agreements and leases as the only sources of revenue. A PTBA could encompass a contiguous area outside of the RTA district. If the area was Vashon Island, for example, the PTBA could collect all authorized taxes since Vashon Island is not within the RTA boundary. However, the amount of revenue available may be inadequate to operate significant levels of passenger ferry service.

- King County might also seek an expansion of their powers as a county transportation authority to include the authority granted to PTBAs in 2003. However, without removal of the prohibition to collect MVET and Sales and Use Tax within the RTA boundary, this option may also produce inadequate revenues to operate passenger ferry service.

County Ferry District

In 2003, the Legislature adopted an expansion of the Chapter 36.54 RCW, Ferries – County Owned, that would allow King County to form a ferry district for the purpose of providing passenger-only ferry service. The legislation provided the legislative authority for a county with a population of over one million having a boundary on Puget Sound to form a ferry district in all or a portion of the area of the county, including areas within incorporated cities or towns. Such a ferry district would be a municipal corporation and be authorized to tax within the meaning of Article VII, Section 1 of the State Constitution.

The King County Council as the ex officio governing body of the Ferry District could levy each year, a property tax not to exceed seventy-five cents per thousand of assessed value.

Utilities and Transportation Commission

A private ferry operator that wishes to operate in the Puget Sound, Lake Washington, Lake Union, or other Washington waters, must obtain a certificate of convenience and necessity, issued by the Washington Utilities and Transportation Commission (UTC). Under the current law, until March 1, 2005, the UTC could not consider an application for passenger-only ferry service serving any county in the Puget Sound region unless the PTBA serving that county by resolution agreed to that application. Private operators are now free to seek a certificate without the agreement of the PTBA; however, private companies are subject to protest from existing public providers and face potential competition from other private providers seeking to offer service in Washington waters. Ferry services are highly regulated and should not be regarded as a free market opportunity. Operating under a UTC certificate, the commercial operator could enter into an agreement with a local transit organization to provide shore side facilities and/or transportation services to and from the ferry terminal.

2.1.2.2 Private Entities

The private sector may be involved in the provision of vessels, operations, or terminals. The actions of these entities are influenced and constrained by different forms of regulatory authority, including the UTC, the National Environmental Policy Act (NEPA), and local land use regulations.

Vessel Suppliers

A waterborne transit system can acquire the vessels it requires to operate in a number of ways. In the Puget Sound region and around the world, private maritime companies have vessels available for lease on both an extended period, including lease buy options, and for a shorter term through a charter without crew, known as a bare boat charter. A waterborne transit operator might also wish to purchase a used vessel from another public or private maritime company or commission construction of a new vessel or fleet of vessels customized to specific operating needs. There are several passenger-only vessel design and building companies located in the Puget Sound region and many others throughout the country.

NEPA and other current environmental regulations impacting the selection of an appropriate vessel technology are not well understood by either the vessel builders or the governmental authorities imposing the regulations, imposing risk that vessels purchased may be deemed unsuitable for the service at some time in the future. A local example of this risk occurred when CHINOOK, a vessel purchased by Washington State Ferries for passenger-only service between Bremerton and Seattle, was required to reduce its travel speed due to wake impacts.

Operators

A number of private maritime companies are operating contracted, regularly scheduled or chartered waterborne passenger service in the Puget Sound region. Private operators may furnish the required vessels or provide only the crew and management expertise to operate vessels provided by a public transit agency.

Washington State has chosen to regulate private passenger ferry service through the UTC process of granting an exclusive franchise for a specific geographic service area. The UTC process also regulates a private operator's return on investment. An alternative model is to allow unlimited competition.

Land or Terminal Owners or Developers

Shoreside terminal facilities can be provided in a variety of ways. Traditionally in the Puget Sound region, terminals have been developed by a public agency such as Washington State Ferries or Kitsap Transit. On the central Seattle waterfront, several passenger ferry operations dock at privately controlled facilities. In other parts of the country and the world (including New York and Victoria, BC) private developers and employers have collaborated with waterborne transit operators through the development of shoreside facilities and through operating subsidies to foster economic development and improved employee mobility.

Shoreside terminals are the most difficult of all capital assets for a waterborne transit operator to obtain. The existing environmental regulations and land-use patterns have severely restricted the development of any new terminal facilities. In addition, the largest terminal owner in the Puget sound, Washington State Ferries, historically has denied access to other operators.

2.1.3 POTENTIAL ROLES

The following chart is intended to highlight the various roles and responsibilities that potential participants might assume in the development and operation of a waterborne transit system.

Exhibit 2-1: Potential Roles

	State	Regional	County	City	Port	PTBA	Vessel Suppliers	Operators	Landside Private
Service manager		✓	✓			✓		✓	
Terminal owner	✓	✓	✓	✓	✓	✓			✓
Terminal operator or maintainer	✓	✓	✓	✓	✓	✓		✓	✓
Vessel owner	✓	✓	✓			✓	✓	✓	
Vessel operator or maintainer	✓	✓	✓			✓		✓	
Funder	✓	✓	✓	✓	✓	✓			✓

A great range of possible options might be employed to structure a waterborne transit system. As discussed throughout this section, later in Sections 3 and 4, and illustrated on the table above, any of four possible public entities might assume full responsibility for implementation and operation of a waterborne transit system. Additionally three of the public ownership options, or all but the State service option, also afford significant collaboration opportunities with the private maritime industry. A decision about which organizational and operational form is best suited to a potential route will require careful considerations of the unique demographic, geographic, financial and operating characteristics of that potential route.

2.2 Facilities

Facilities consist of the terminals and docking / maintenance / fueling area(s) required to provide a passenger service.

2.2.1 CURRENT ENVIRONMENT

A variety of terminals are currently in use for passenger-only ferry service in the Puget Sound Area, under both private and public ownership and operation.

2.2.1.1 Terminal Ownership

State owned passenger-only ferry terminals are currently in use on Vashon Island and in Downtown Seattle at Pier 50.

Kitsap Transit owns the Bremerton passenger-only terminal. The Kingston terminal was built by the private operator Aqua Express, and is being purchased by Kitsap Transit from Aqua Express.

The West Seattle terminal used by the Elliott Bay Water Taxi is owned by the City of Seattle.

Other than Pier 50, all Downtown Seattle terminal facilities used by current passenger-only ferry services are owned by the private operator Argosy Cruises.

A team including Kitsap Transit, the City of Seattle, the Waterfront Advisory Team[1], and others is exploring the potential for a new passenger-only ferry terminal on the central Seattle waterfront. Terminal Passenger Amenities.

Passenger amenities at the current terminals are minimal; though tend to be more extensive at WSF terminals serving both passenger-only ferry riders and passenger-vehicle ferry riders. A covered waiting area is sometimes, but not always, provided, and not all covered waiting areas are climate controlled. Staffed ticket sales are common. Some form of restroom facility is generally provided at terminals owned by WSF. Concessions are generally not available at terminals, though many terminal locations are near places to purchase food.

2.2.1.2 Intermodal Facilities and Ferry Terminal Access

Transportation connections intended specifically for use by ferry riders are more common at the terminals outside of Downtown Seattle, which have lower densities of employment, population, and transportation options.

Vashon patrons can access the Vashon terminal by two King County Metro bus routes, or by private automobile. The Vashon terminal also serves WSF passenger-vehicle ferries to Southworth and to West Seattle. Parking options include private and municipal lots near the terminal, as well as five Metro Park & Ride lots throughout Vashon Island, which are served by bus routes that stop at the ferry terminal.

The Elliott Bay Water Taxi West Seattle terminal is served by special ferry shuttles from Seacrest Park to West Seattle Junction and from Seacrest Park to Alki and SW Admiral Way, as well as two regular Metro bus routes. No parking is provided at the West Seattle terminal for commuters. Some

[1] Waterfront Advisory Team members include Mayor Bozman (Bremerton), Elizabeth Connor, Karen Dauber, Kathy Fletcher, Flo Lentz, Melinda Miller (Port of Seattle), Paul Niebanck, Paul Schell, Greg Smith, Barb Swift, Heralg Ugles, and Phil Wolhlstetter, with Diane Sugimura as the City staff lead.

non-restricted parking is available on-street near Seacrest dock but the number and availability of spaces is limited.

Public transportation connections from the Bremerton terminal, known as the Bremerton Transportation Center (BTC), include 12 Kitsap Transit routes, one Mason Transit Route, and the WSF passenger-vehicle ferry, which serves the same route as the passenger-only ferry. The Bremerton Transportation Center features an extensive bus staging area, with waiting space for 15 transit vehicles (14 Kitsap Transit buses and one Mason Transit bus). Parking near the BTC is available in private and municipal lots, including the parking garage at the Bremerton conference center and the City of Bremerton public garage. Additional parking is available in five Park & Ride lots served by Kitsap Transit routes with stops at the ferry terminal.

Transportation connections from the Kingston terminal include two Kitsap Transit routes, the WSF Kingston-Edmonds passenger-vehicle ferry, and several parking options. Kitsap Transit owns a Park & Ride lot near the Kingston terminal, and charges $4 a day for use of the lot. Free parking is available at other Kitsap Transit Park & Ride lots farther from the ferry terminal.

For the Downtown Seattle terminals, there is neither dedicated parking nor dedicated bus service. However, there is a wide range of transportation options within walking distance. Parking is available in private and municipal lots. Transit connections can be made with numerous bus routes, the waterfront streetcar, and – approximately ten blocks southeast of Pier 50 – Amtrak and Sounder trains at the King Street Station. Ferry transfers can also be made to passenger-vehicle routes operated by WSF to Bainbridge and Bremerton and to other passenger-only ferries.

2.2.2 TERMINAL AND MAINTENANCE FACILITY COMPONENT ELEMENTS

The different elements of this component – terminals and maintenance facilities – each have a range of potential options for their design and configuration. Which options are appropriate for a particular service depend on the characteristics of the route and markets to be served.

2.2.2.1 Terminals

Practically speaking, the location and ownership of terminals is a basic driving force in the viability of, and the options available to, a potential ferry route. Terminals are the most important piece of infrastructure in a ferry system, but are frequently difficult to site (in the case of a new terminal) or acquire the use of (in the case of an existing terminal).

The most important elements at passenger ferry terminals include the passenger terminal / waiting area facilities, vessel docking facility, connection from landside to dock, and intermodal features such as parking and transit stops. All terminal facilities must be ADA-compliant.

2.2.2.1.1 Terminal Building

Building Type

Terminals for passenger ferries can be very simple, as exemplified by the Elliott Bay Water Taxi, or large complex facilities such as the SeaBus Terminals in Vancouver. In many respects, a ferry terminal can be equated with a commuter rail station. A passenger building is not required, but adequate weather protection for waiting passengers is an important consideration.

Building Size

The largest component of the terminal building will be the waiting area, the size of which will be determined by the volume of passengers using the facility, and the typical waiting times based on ferry frequencies.

It is reasonable to size the terminal for a representative typical peak hour and not necessarily on the highest demand expected during the year, which may occur during a peak season, special event or holiday. However, provisions should be made to manage occasional overflow crowds if they are expected.

The Highway Capacity Manual defines Levels of Service (LOS) for passenger waiting areas ranging from LOS A (most spacious) to LOS F (crowded to extremely uncomfortable density). LOS C is generally considered appropriate for transit waiting areas, and ranges from 6 to 10 square feet per person. It is recommended that 8 square feet per person be provided for passenger waiting areas. In addition, it is reasonable to provide seating in the waiting area for about 20% of the waiting passengers, which will require an additional 5 square feet per seat for the waiting area.

Any walkways that are provided should be as wide as possible. At a minimum, they should be wide enough to allow faster walkers to overtake slower walkers. The width required for two people to comfortably walk abreast is 5 feet, plus a 6-inch buffer along each wall. Therefore, a two-way walkway should be 11 feet wide, while a one-way walkway need only be 6 feet wide.

There will be other space needs at the terminal locations, some of which may require space in a building. Functions that may require terminal space include: vending for tickets, newspapers, food / drink, etc.; traveler information center; storage for maintenance / cleaning equipment; electronics room to hold communications or security electronics if needed; and passenger restrooms if needed. If the terminal will also be used for overnight moorage, then space will be needed to store vessel supplies and a dumpster for vessel trash. If the terminal will have staffed ticket booths, then an employee restroom will be required, and possibly a room dedicated to counting ticket booth revenue, depending on the accounting practices of the ferry operator.

Building Location

Waiting areas can be built onshore, on a fixed pier, or on a float. Developing waiting areas for passengers onshore is generally less expensive than providing the space on either a pier or float; however, there can be a significant penalty in boarding time if passengers must be held on land until the vessel is secured.

Over-water structures typically raise more environmental concerns than do structures on shore. These environmental concerns increase the cost and difficulty in obtaining permits for over-water structures. Two of the biggest environmental concerns of over-water structures are the effects of pile driving during construction, and underwater shading caused by structures.

Over-water structures are supported by piles, which usually must be installed with a pile-driving operation. Pile-driving is extremely harmful to marine life, and also disruptive to nearby people.

Near-shore marine life depends on sunlight that filters through the shallow water, and is harmed by structures that block the light. As a result, it is more difficult and costly to obtain permits for over-water construction.

At the March Stakeholder Meetings, several issues about the qualities of terminal facilities were raised. Comments were made about the importance of attractive terminal aesthetics and matching terminal design to the character of the neighborhood in which is located. Some saw terminals as an opportunity to create spaces for people to experience the waterfront. Comments went both ways about the importance of using green design in terminal buildings – some seeing it as unnecessary and others seeing it as a representation of the environmentally conscious values in the region and as a selling point to potential passengers.

2.2.2.1.2 Terminals – Passenger Amenities

Passenger amenities may vary depending on service objectives and adopted service quality standards. Amenity decisions should be based on the volume of passengers and the average passenger wait time. An appropriate comparison for the level of amenities that should be considered are standards used to determine bus and rail facilities with similar passenger volumes within King County.

Seating

Common practice suggests that seating should be provided for 20% of the expected number of people that will be waiting for the ferry in the peak hour. For each seat provided, 5 square feet should be added to the size of the waiting area. Seating is typically designed with armrests for each seat, or varying elevations for each seat to discourage patrons from lying down.

Restrooms

A reasonable benchmark for deciding whether or not to provide restrooms is the established practices used at other transit centers in the region. Bus stations, transit centers, and park-and-rides in the region generally do not provide restrooms for patrons, although all WSF terminals except one do have restrooms.

Restrooms are appreciated by the public, but they require a significant maintenance effort. King County Metro current policy requires that restrooms be monitored while open. In some cases, that maintenance can be shared with other nearby public amenities.

Concessions

Concessions or vending machines can be provided depending on the potential market. Even if the ferry route does not have enough traffic to support a concession, it may be possible to provide retail or food and beverage service based on other nearby waterfront uses. Similarly, other services such as bank machines, public telephones, transit ticket pass sales, or other public services may be viable based on the total pedestrian traffic in the vicinity.

Concession areas require electrical power and an area of about 3 feet by 3 feet for each large vending machine. Trashcans and regular cleaning and maintenance are also required. Utility use and trash collection needs will be greater at a terminal with concessions than one without, but the added expense may be recovered through the concessionaire's rent. Concessions may increase the need for terminal cleaning, depending on the default cleaning frequency.

Real-Time Traveler Information

Real-time traveler information may be provided via electronic variable message signs or computer monitors. Information can be provided about arrival times of ferries and connecting buses or trains, and congestion levels of streets and highways. Coordination with other agencies may be required. This would also require data collection equipment, such as video cameras and GPS tracking devices, at terminals and on vessels; a central computer to process the data; and a communication network to distribute the data.

Wayfinding and Tourist Information

Clear and consistent wayfinding signage is essential. The signage should be consistent within a terminal, among other ferry terminals, and with other transit terminals as much as possible. Signage should be provided instructing patrons on how to pay the fare, where to board the ferry, where to wait, and where to connect with other transit systems.

Local and regional map signs can be provided to help patrons plan routes and find connecting transit lines. Schedules for the ferry service and for nearby transit services can also be provided, and space can be allotted for bulletin boards and racks for brochures of local attractions.

Ticket Sales

Ticket sales can be done by vending machines or by staffed ticket booths. Vending machines require less terminal space and less operational expense. Staffed ticket booths provide a human presence in the terminal, which deters crime, increases security, and improves customer relations.

If ticket booths are provided, the number of ticket booths needed should be based on the expected arrival rate of passengers during the peak hour and the expected average transaction speed of a ticket purchase. A reasonable size of an ADA-accessible toll booth is 65 square feet.

Fare collection is typically done onboard, as passengers enter the vessel. Collection of cash fares, particularly if change is given, can substantially slow the boarding process. For rapid boarding, it is preferable that all ticket and pass sales be done prior to vessel boarding. Alternatives to manual collection as passengers board are often problematic. Turnstiles tend to be impractical given the level of infrastructure required. Proof of payment may result in an unacceptable level of fare evasion given the ease of passenger circulation onboard.

Personal Security

It is important to provide a safe terminal for passengers. Terminals should be designed with personal safety in mind, following the principles of Crime Prevention Through Environmental Design (CPTED). Personal security features include effective pedestrian scale lighting in and around the terminal, security cameras, emergency phones, and visible security personnel. Light is the most important of these security features; the others are optional. Security cameras would likely be monitored off-site by either agency personnel or a private company. Cameras could also be used to monitor travel conditions and provide data to traveler information systems.

Airport style security inspections for passengers boarding ferries are not required by the Transportation Security Administration (TSA) at this time; however, this is an option that may have to be accommodated in the future. Security space requirements in the future could include an area

for screening passengers, an enclosed area to contain passengers that have been screened and are waiting to board the ferry, and an interview room to hold passengers that have failed the screening process.

2.2.2.1.3 Terminals – Vessel Access

Fixed Dock The simplest facilities are based on a fixed dock. On water bodies with little to no water level variation, the fixed dock is sufficient. However, on water bodies with significant tidal or seasonal variation, the fixed pier is supplemented with a floating ramp arrangement that adjusts for changing water levels. On the Puget Sound, the relatively large tidal variation means that long ramps are required in order to meet the intent of ADA regulations. Alternatives to long ramps include powered wheelchair lifts or manual assistance. With a fixed dock configuration, waiting passengers can be held on the pier or in an upland terminal.

Floating Dock A second alternative is to build a floating dock facility. This arrangement is used for the SeaBus in Vancouver and allows the passengers to wait in a floating building at freeboard height. This speeds up loading and unloading, as passengers do not need to negotiate any inclined ramps to board or alight. All level changes occur prior to the final boarding process, which makes accommodating the disabled much easier.

The pedestrian path to the vessel will also be influenced by the height above sea level of the upland terminal. If there is a large grade difference, it may be necessary to provide escalators or an elevator to reach the pier or float. If the terminal is located in an area of shallow water, there may be a long walk out to the ship. It may be necessary to provide assistance to the disabled to reach the vessel.

2.2.2.1.4 Terminals – Upland Facilities

Upland facilities will also vary with the ferry services. A route designed to serve local walk-in traffic will not need major parking facilities or a bus loop. A major ferry route might require both a bus terminal and parking lot or other intermodal connections. A major terminal can serve as a transportation hub as well a community hub as shown in the Bay Area and Vancouver. For all routes, adequate and appropriately scaled transportation connections are vital. Support was expressed in the March Stakeholder Meetings both for terminals with primarily pedestrian connections located in areas of high density (to promote growth management) and for terminals located in industrial areas, which would require parking facilities and more extensive transit facilities.

Pedestrian Connections Terminals should be located and designed to allow easy connections to nearby pedestrian facilities. Easy and safe walkways should be provided to transit facilities, public spaces, parking areas, and other passenger destinations. Consideration should be given to making the connections direct and short, and avoiding elevation changes if possible. Connections should be designed to avoid private spaces and other areas not suited for crowds.

Bicycle Connections and Parking Existing ferry and transit systems in the region accommodate bicycles. Space should be provided for bicycles on the vessels as well as in the terminals, and terminals should be designed to permit bicyclists to walk their bicycles through them to the road, quickly and without creating a hazard for other passengers. Bicycle parking facilities, such as bike racks or bike lockers, should be considered at terminals, and be placed in well-

lit areas when provided.

It is preferable to provide separate bike lanes on any terminal roadways, although that is often not possible. It is important to design a route for bicyclists from the vessel to the road that is safe for bicyclists, pedestrians, and vehicles. Bike routes should be designed to avoid private spaces and other areas not suited for bicycles.

Transit Connections Direct and safe walkways that make the intermodal transfer as convenient as possible should be provided to nearby transit facilities. To the extent possible, ferry schedules should be coordinated with schedules of connecting transit services.

Vehicle Parking Demand for passenger parking will be significantly higher on a commuter ferry route than on a connector route. The amount of parking and its convenience and cost can greatly impact the ridership on a ferry route, especially a commuter route. Parking can be provided directly adjacent to a ferry terminal, or within a walkable distance to the terminal, or even at a remote site with a shuttle to the terminal. Ferry employee parking is needed either at the overnight mooring location, or at or near one of the terminals on the route, since often crew are required to report to work before other transportation options are available. Parking lots should be designed to minimize negative traffic and visual impacts on the surrounding communities.

Kiss & Ride Demand for a Kiss & Ride area will be higher on a commuter ferry route than on a connector route, although one should be provided for all terminals. People will drop off and pick up whether or not a specific location in provided. In order to control potential conflicts with other uses, a drop off area should be provided in a convenient location close to the terminal when possible. If the Kiss & Ride is in an inconvenient location, people are unlikely to use it, and they may use a less safe location closer to the terminal instead.

The Kiss & Ride should be designed to allow safe loading and unloading of vehicles and merging into traffic. An effort should be made to size the area appropriately for the number of expected users.

While transportation connections to land-based modes are extremely important, care should also be taken in the design of routes, the location of terminals, and the types of transportation connections provided (e.g., express bus service) to try to minimize the number of transfers required between a traveler's origin and destination. More transfers tend to result in lower ridership.

2.2.2.2 Maintenance and Service Area

The maintenance and fuelling requirements will vary with the size of the fleet and the type of operation. One of the challenges of a small fleet is the need to operate without a spare vessel. This means maintenance must be done overnight by staff crews or contractors. The maintenance facility should include a refueling capability as well as connections to dump the head (if onboard restrooms are provided). Heavy maintenance, including annual inspections, can be contracted to local shipyards. Deadhead time is costly and, as a result, the maintenance area should be located convenient to the ferry routes.

2.2.2.2.1 Overnight Mooring and Maintenance Site

Dedicated New Facility	A dedicated maintenance facility could be necessary depending on the fleet size.
At Terminal	Overnight mooring of vessels can be accommodated at the terminals themselves, if the ships do not block operations and there is space to accommodate cleaning and running repairs.
Leased Space	If a particular route is close to an existing facility with capacity it may be advantageous to contract for moorage and maintenance rather than pay lengthy deadhead time to reach an in-house facility.

2.3 Vessels

Vessels come in many sizes, shapes, and speeds. Matching vessel design to the route is far more important for waterborne transit than matching vehicle design to the route is for land based transit. Vessel design fundamentally impacts schedule, operating costs, and environmental impacts.

2.3.1 CURRENT ENVIRONMENT

Several vessels are currently in use for passenger-only ferry service in the Puget Sound Area, under both public and private ownership and operation.

2.3.1.1 Vessels

Of the five vessels currently in use for scheduled service to King County destinations, all are in operation in the salt-water environment of Puget Sound. Washington State Ferries owns two aluminum monohull vessels, the SKAGIT and KALAMA, which serve the Vashon route. The Bremerton-Seattle passenger ferry route operated by Kitsap Ferry Company is served by the 72-foot aluminum catamaran vessel, the RACHAEL MARIE. Kitsap Ferry Company leases RACHAEL MARIE from a vessel leasing company. The Elliott Bay Water Taxi is currently being served by a 70-foot monohull, SIGHTSEER. The Kingston-Seattle passenger-only ferry route is served by the 92-foot aluminum catamaran vessel TYEE, formerly owned by WSF and now renamed the AQUA EXPRESS. All five of these vessels are side loading and equipped with passenger restrooms and bicycle storage. The vessels range in passenger capacity from 149 passengers (SIGHTSEER) to 292 passengers (AQUQ EXPRESS). The four vessels with cross-Sound routes all have a passenger capacity greater than 150, with the 199-passenger RACHEL MARIE being the smallest.

Efforts are currently underway to improve the environmental performance of vessels operating in the Puget Sound region, particularly wake impacts. Key among those efforts is the Federal Transit Administration funded Seattle–Bremerton Passenger-Only Fast Ferry Study. The Fast Ferry Study is combining extensive new research with historical data to provide a detailed understanding of potential shoreline impacts of fast ferry service in Rich Passage. This understanding will be used to develop a tool for predicting shoreline impacts based on the specific characteristics of Rich Passage and a scientific understanding of wake generation and propagation. This tool will then be available for use in evaluating potential routings, operating speeds, and hull designs.

Kitsap Transit is working to acquire its own fleet of passenger-only vessels to replace those currently used by the Kitsap Ferry Company and Aqua Express. The new vessels will each have a capacity of 149 passengers. Kitsap Transit is watching carefully the work of the Seattle–Bremerton Passenger-Only Fast Ferry Study and is hopeful that a new low wake vessel design and select shoreline mitigations will allow high speed ferry travel through Rich Passage and other narrow waterways in the near future. Kitsap Transit is also working with several local boat builders to develop new, innovative, fuel-efficient designs.

2.3.2 VESSEL COMPONENT ELEMENTS

For effective and efficient service, vessel design should be carefully matched to the route characteristics and markets served for each particular route. Important design features include passenger capacity, hull design, vessel speed, and onboard amenities.

Passenger vessels are regulated by the U.S. Coast Guard as regards their construction, equipment, and operation. These regulations are promulgated in Chapters 33 and 46 of the Code of Federal Regulations. There are also guidelines and policies that may be found in Coast Guard publications

such as the Marine Safety Manual and Navigation and Vessel Inspection Circulars. This system of regulations has produced a transportation mode that has an excellent safety record.

2.3.2.1 Vessel Classifications

Passenger-only ferries can generally be grouped into three broad categories:

≤ 49 passengers

Small passenger vessels may be constructed of a variety of materials such as wood, steel, fiberglass, or aluminum. The latter two materials are the most popular because of their lower maintenance requirements. Because of the small number of passengers, these vessels only need to meet simple requirements for stability, safety equipment, and construction. They are generally suitable for protected routes such as lakes or harbors. These vessels typically use a monohull configuration to minimize capital cost and are powered by a single diesel engine because their service requires less speed and for lower maintenance costs.

50 ≤ 149 passengers

Vessels with a capacity of less than 150 passengers are still regarded as small passenger vessels by the U.S. Coast Guard. They can be evacuated faster than larger vessels and require fewer redundant safety systems. This in turn reduces vessel weight, which increases fuel efficiency, resulting in lower costs per seat mile. Vessels with a capacity of fewer than 150 passengers are also not subject to the same security requirements as larger vessels.

Fifty to 149-passenger vessels may be constructed of the same materials as less than 49-passenger vessels. The configuration may be either monohull or catamaran type and typically will be powered by two diesel engines. The choice of hull configuration depends on the performance requirements of speed, seakeeping, wake wash, and construction cost. The larger size of these vessels makes them suitable for operation on partially protected waters and for longer routes.

≥ 150 passengers

Larger vessels (≥ 150 passengers) generally have high safety standards for design and construction since the consequences of a fire or sinking are greater. Their hull construction is limited to steel or aluminum and their hulls must be subdivided into watertight compartments to limit the extent of flooding due to a grounding or a collision. The Transportation Security Administration has determined that vessels carrying more than 150 passengers are potential terrorism targets and thus are subject to requirements for security screening of passengers, special training for the crew, and documentation of security programs. The configuration may be either monohull or catamaran type and the vessels have redundant systems for propulsion, steering, electrical power, and fire-fighting. Propulsion power is typically provided by two or more diesel engines driving either propellers or waterjets. Due to their large size, these vessels can be used on partially protected or exposed routes; however, this size also results in larger wake wash characteristics.

Unlike a bus, which may have a crush capacity that is double its seating capacity, a ship is licensed for only a fixed number of passengers and this number cannot be exceeded.

One of the challenges in any ferry operation is determining the right mix of the number of vessels and vessel size to handle a given traffic demand. A single large vessel can move passengers at a

lower cost per passenger than several smaller vessels if the passenger load is a high percentage of the vessel's capacity. This makes large vessels more suitable for commuter runs with significant peak demand during parts of the day. Small vessels, although more expensive to operate per passenger, can provide operational flexibility that allows an operator to bring vessels into service as needed due to seasonal, weekly, or daily demand shifts. This makes small vessels more suitable for a tourism-based operation. Running small vessels more often may also improve the attractiveness of the service as it increases the flexibility of the service.

2.3.2.2 Hull Design

Monohull Monohull vessels are typically used for smaller and/or slower passenger ferries due to lower construction costs per passenger seat. The hull has substantial volume, providing room for machinery and fuel tanks and creating easier access for maintenance tasks. Monohulls have a greater ability to carry weight and provide a better ride in rough water. Passenger seating may be partially recessed into the hull or may be located on one or more decks. The vessel can be powered by a single engine. At slow speeds, monohulls burn less fuel. However, at higher speeds, monohulls may burn more fuel and produce more wake, due to higher resistance.

Catamaran Catamaran vessels are typically used where higher speeds (greater than 20 knots) or improved seakeeping is required. The configuration of two hulls is more expensive to construct and the restricted volumes within those hulls makes installation and maintenance of machinery more challenging. Operating at high speeds requires larger horsepower and therefore higher total fuel consumption, though catamarans tend to have lower fuel consumption per knot at high speeds than monohulls. Weight control is critical and the hull, machinery, and cabin outfit are all selected for light weight. This means that catamarans carrying less than 150 passengers are constructed of either aluminum or composite materials while those carrying more than 150 passengers are exclusively constructed of aluminum. The slender hulls of catamarans tend to produce less wake and experience less resistance.

Monohull and catamaran vessels can come in different designs defined by which forces are intended to support the hull in the water. These different hulls are described as displacement hulls, planing hulls, or semi-planing hulls.

Displacement hull: vessel is supported by the water's buoyant force, which is equal in magnitude to the weight of water displaced by the vessel. Speed (in knots) is limited to approximately 1.34 times the square root of the vessel's water line length (in feet).

Planing hull: displacement hulls create a bow wave, and the bow remains behind this wave at all times. In contrast, a planing hull lifts itself on top of its own bow wave using hydrodynamic lift, reducing the wetted surface (reducing friction) and enabling the vessel to travel over the surface of the water at high speeds.

Semi-planing hull: vessel is able to exceed displacement speeds by achieving some lift; however, the vessel still pushes through the water rather than riding on top of it. Tends to have better seakeeping than planing hull, but more fuel usage.

Other hull technologies are available (including hovercraft, hydrofoil, and small-waterplane-area twin-hull ship), but each hull type has its advantages and disadvantages. The selection of the optimum vessel type should be the subject of a technical performance study. The other options are unlikely to be suitable for passenger ferry vessels between King County destinations and hence are not covered further in this study.

2.3.2.3 Vessel Speed

In addition to the regulatory network constraining vessel operation, there are also environmental factors that can influence the choice of vessel. For King County, there are basically high speed routes on fresh water (Lake Washington), slow speed routes on fresh water (Lake Union), high speed routes on salt water (Puget Sound), and medium speed routes on salt water (Elliott Bay).

Vessel speed influences fuel consumption, wake, and impacts on other water users, such as rowers.

≤ 7 knots This is the speed limit for essentially wakeless operation and for areas with significant vessel traffic. As such, it is the controlling speed for Lake Union, Portage Bay, the Ship Canal, and passages under the floating bridges on Lake Washington. In this speed range, all of a vessel's weight is being supported by buoyant forces.

7 knots ≤ 20 knots Depending on the hull configuration and vessel size, this is the speed range for displacement or semi-planing hull forms. A monohull or catamaran vessel operating within this speed range can produce a substantial wake wash. Some of the vessel weight is beginning to be supported by the dynamic forces produced by motion through the water. A high speed vessel will generally want to move through this speed range quickly to avoid wakes. Wake tends to increase as speed increases until the vessel has transitioned from displacement to planing. Through the transition period, the bows lifts higher in the water, increasing resistance, until the stern also lifts to a planing position. Increased wake may also be generated when the vessel transitions from planing to displacement. Generally, a properly designed catamaran will have less wake wash within this speed range than a monohull.

≥ 20 knots This is the area of high speed where a significant portion of the vessel's weight is being supported by dynamic forces. For speeds up to approximately 25 knots, a propeller driven vessel has greater efficiency. Above that speed, waterjet propulsion is more efficient. Generally, diesel engines are used to drive vessels up to approximately 35 knots. If greater speeds are desired then either gas turbine engines or novel hull types are required.

Vessel resistance increases approximately as the square of speed. For example, traveling 20 knots results in four times the resistance of traveling at 10 knots. Since engine power, and hence fuel consumption, is proportional to resistance, higher speed means substantially more fuel consumption and emissions. Engine power is also directly related to vessel weight. If a high speed vessel can be designed with a 10% savings in weight it will have 10% less resistance and require 10% less engine power. Therefore decisions on the design speed and weight of amenities carried onboard can have significant impacts on operating costs due to higher fuel consumption and environmental issues.

2.3.2.4 Fuel Efficiency and Emissions

Most urban ferry systems today are powered by diesel engines. New requirements for cleaner diesels for marine applications will be coming into effect soon (U.S. EPA Tier II Compliant). However a ferry will always require more power than an equivalent capacity bus due to the lower rolling resistance and wind resistance of a bus. In order to achieve overall emissions reductions, a ferry would have to attract mainly single occupant vehicle drivers, or offer a significantly shorter transit distance than an existing bus service. Alternative technologies are available to produce cleaner engines, and this is a requirement for new ferries in the San Francisco Bay Area. Alternative fuels such as natural gas and fuel cells are also being tested.

2.3.2.5 Onboard Amenities

Enclosed Cabin

Given Seattle's climate, an enclosed cabin would be a requirement for all year-round services, and highly advisable even for summer only services. Enclosing the passenger spaces also requires that heating and ventilation be provided to maintain passenger comfort. Given the wet weather in the area, provision for defrosting windows is essential.

Seating and Tables

The level of comfort for onboard seating is primarily dependent on the crossing length. Basic seating, provided via benches or unpadded chairs, may be sufficient for crossings under 30 minutes; however, cushioned seating should be considered for longer crossings. In addition, regular riders such as commuters tend to expect a higher level of comfort, even on shorter crossings.

Depending on the seating arrangement, tables can be provided with minimal to no additional space required. Tables can be particularly useful to passengers who wish to work or eat while onboard.

Public Restrooms

Whether or not to provide public restrooms is primarily a function of trip length, available space, and costs. For trips over 30 minutes, the U.S. Coast Guard requires that restroom facilities be provided for passengers. Disability access requirements for passenger vessels result in restrooms facilities that are larger than those typically found in other transportation modes such as buses or trains. On small vessels where space is at a premium, such facilities require careful planning.

Crew Restrooms

Unlike passengers, crew members are expected to remain on-board for long periods of time independent of crossing length. If crew members must use onshore restrooms, suitable rest breaks need to be incorporated into the operating schedule.

Onboard Food Service

Concessions represent an opportunity for additional revenue for the operator but also involve capital and operating costs. Generally, trips of greater than 45 minutes can justify the commitment of space, weight, and crew labor for food service. By providing food service, the operator will also have to deal with health inspections and additional training for the crew.

Electrical Outlets

Sounder commuter rail cars include 110 volt outlets and tables for laptop computer users, and similar amenities could be considered for passenger-only ferries on longer routes. Operators need to be aware that power supplies onboard vessels are not as precise or as well regulated as land based facilities and may adversely affect some electrical equipment.

Wireless Internet Access — Wireless internet access is being tested onboard some WSF routes and could be another amenity to consider. Monthly use fees can be charged, creating another revenue source.

Outdoor Deck — Outdoor decks are popular, particularly among smokers and tourists. However, they have limited usability due to weather conditions and the extra space provided by outdoor decks can count towards the total vessel passenger capacity.

Multiple Decks — Multiple decks are typically found on vessels carrying more than 80 passengers, especially for catamaran vessels, which have greater stability characteristics. Multiple decks create the need for more crew members. A second deck can reduce the length or beam of vessels if size is a problem, but may slow alighting, as some passengers may not want to descend stairs while the ship is moving. An elevator or chair lift to the upper deck is not a requirement for passenger vessels with two passenger decks unless there are different amenities, such as food service, on different decks.

Bicycle and Other Storage — By providing bicycle storage onboard, waterborne transit can enable bicycle connections between destinations that were difficult to travel between by bicycle previously. However, care should be taken in siting storage for bicycles and other large objects so as not to block internal circulation in the vessel or emergency evacuation routes. For services operating in salt water, it is preferable to protect bicycles from salt spray, as bicycles can be damaged by salt corrosion.

2.3.2.6 Disabled Accommodation Requirements

In 1990 the U.S. Congress passed the Americans with Disabilities Act (July 26, 1990 104 STAT. 327). In the associated notice of proposed rulemaking (NPRM) to implement the Americans with Disabilities Act (ADA) the Department of Transportation recognized that passenger vessels and the services they provide are a form of transportation that must be accessible. However, at that time (1991) the Department also recognized that it lacked the necessary information to proceed to a rulemaking and hence the section regarding ferries was reserved. In 1998 the U.S. Access Board convened a committee of industry representatives and disability advocates to propose guidelines for passenger vessel access. Following the committee's final report in December 2000, the Access Board has developed an NPRM to establish access guidelines for large passenger vessels (those carrying more than 149 passengers). The NPRM was issued on November 26, 2004 with a comment period extending into late 2005.[2] The Access Board has also issued an advanced notice of proposed rulemaking (ANPRM) to query industry and advocates as to appropriate standards for smaller vessels.[3]

Public transit operations are required under Title II of the ADA to remove barriers where readily achievable and to make their facilities and vehicles accessible. Any public ferry operation in the Puget Sound area needs to comply with the intent of the law even though the guidelines for implementation are still under development.

[2] The draft passenger vessel accessibility guidelines for vessels carrying over 150 passengers is available online at www.access-board.gov/pvaac/guidelines.htm#ROUTES - gangways V413.
[3] The advanced notice of proposed rulemaking for small passenger vessels is available online at www.access-board.gov/pvaac/anprm.htm.

2.3.2.7 Mooring and Boarding / Alighting Systems

Another major issue is boarding/alight and mooring systems. These systems have a major effect on the dwell time and personnel requirements.

Manual Mooring Systems — Manual systems that require tying up a vessel with ropes and lines tend to be slow and labor intensive on larger vessels.

Automated Mooring Systems — Mooring for rapid transit ferries such as SeaBus in Vancouver are fully automated. The ship is held in place by hydraulic arms and ramps during the boarding/alighting process. These speed up the entire process and should be considered for larger vessels.

Side Loading Vessel — Side loading vessels, which traditionally use a gangway for boarding/ alighting, are generally considered to be slower loading than bow loading vessels. However, the use of multiple doors and automated mooring, such as done by SeaBus, can achieve rapid loading.

Bow Loading Vessel — Vessel designs that incorporate the option of bow loading can reduce terminal costs and still provide similar automated docking systems.

If turnaround time is a major consideration, it can sometimes be easier or less costly to reduce overall travel time by designing the vessels and terminals together to facilitate rapid docking, boarding and alighting.

2.3.2.8 Maintenance Design

Vessels can be designed to reduce cost and downtime through strategies such as easily accessible lube oil fittings and filters, and quick change engine design. These, and other strategies for efficient maintenance, are particularly important for routes operating without spare or replacement vessels. Ideally, a ferry should have a range of at least one day to one week between fuelings and offer at least 99% mechanical reliability. High speed vessels, because of their weight sensitivity, may not be able to carry sufficient fuel for a week's service and may have to fuel more frequently. The preferred duration between fueling is an operational decision. The more fuel stored onboard the heavier the vessel, resulting in increased demand for power to maintain speed. However, taking a special run to fuel entails both additional crew and fuel costs. Designers typically think of fuel capacity in terms of the distance the vessel can travel between fuelings. However, the length of time between fuelings may be a more useful measure for a fixed route ferry service.

2.3.2.9 Other Vessel Attributes

Noise — There are well established standards for acceptable noise exposure levels for passengers and crew. Less well defined are noise standards for airborne or underwater radiated noise that may impact nearby residences or marine life. Currently, WSF is conducting a study on underwater noise as part of their environmental impact analysis for the new 130-car ferry program.

Stability — Since a ferry is a dynamic object moving on a dynamic medium, stability is a measure of the vessel's ability to remain upright and afloat despite wind conditions, expected sea conditions, and possible damage to the vessel. The U.S. Coast Guard has established strict regulations for both intact and damaged stability that depend upon the operating area of the vessel and the number of passengers carried.

Ride quality or passenger comfort is partially dependent upon the inherent stability of the hull but it also depends upon the vessel speed and direction relative to the prevailing waves and the size and characteristics of those waves. Different passengers may have different motion tolerances. For all these reasons, passenger comfort becomes a matter of statistical likelihood. Some people will experience motion discomfort even with the vessel tied to a dock. Most wave activity is due to sustained wind, which generally blows in north – south directions. Therefore, vessels operating on east – west routes will have greater exposure to beam seas and therefore experience a higher incidence of motion discomfort.

2.3.2.10 Fleet Size

The fleet size will be dependent on a number of factors, and may vary between the groups of services under consideration in King County. The primary drivers will be the frequency of service, number of routes to be served, desire for spare vessels, and the ability to obtain vessels within the constraints of the governance structure and available financial resources. One important tradeoff to consider regarding fleet size concerns the number of vessels compared to the passenger capacity of each vessel. A larger number of smaller vessels making more frequent sailings can have the same total passenger capacity per hour as a smaller number of larger vessels making less frequent sailings.

2.3.2.11 Vessel Procurement

One early and important decision is whether or not new vessels will be built for the service or existing vessels sourced for purchase, lease or contracted operations.

Ferries can be acquired though design and purchase, lease or charter. The vessels can themselves be new or used, but, as a result of the Federal Jones Act, all ships in domestic service must be built in the United States.

Purchase New Allows for design and construction of a vessel to meet the specific needs of the service to be operated. By purchasing a new vessel, hull design, freeboard height, draught, propulsion system, and amenities can be customized to suit the specific operating conditions.

Purchase Used A used vessel will typically be less expensive than a new vessel, but it may be difficult to match available used vessels with the specific requirements of a particular route.

Lease An alternative to an outright purchase is to lease a custom built vessel. A lease has advantages and disadvantages based on the specific terms of the lease. It can offer a means of getting a new vessel without tying up capital. Leasing may provide private operators with tax benefits that may provide a less costly alternative to purchase. Used vessels can also be leased.

Charter A charter arrangement is when the owner of a ship provides both ship and crew, or just the vessel as a bare boat charter, as part of an operating agreement. It is difficult to generalize about the advantages and disadvantages of this approach as it also depends on the specific conditions. One advantage is that the arrangement could become a partnership where the ship is used for other purposes by the actual owner if it is not required in midday or on weekends for commuter service. The

additional use of the vessel could help reduce the costs of the passenger ferry service. However, in practice, vessels are often not put to secondary uses because of the risk doing so places on the ability of the vessel to carry out its primary purpose.

2.4 Operations

This component includes the service schedule and the activities necessary to operate and maintain the waterborne transit's vessels and facilities. The size and form of the operating entity will depend on the organizational model that is adopted for the program (or each route), the number of routes operated, and the size of the fleet, and number and size of the terminals.

2.4.1 CURRENT ENVIRONMENT

Current Puget Sound passenger-only ferry services are primarily peak-period commuter oriented, with the exception of the Elliott Bay Water Taxi which provides all day service. All services, except the Vashon Seattle service operated by WSF, are operated by the private sector, whether contracted or through a joint development agreement with public sector partners.

2.4.1.1 Service Frequency and Span

Of the four current passenger-only ferry routes, three operate in the peak periods only, and one provides all day service, but only during the summer months.

Seattle – Vashon

The Seattle – Vashon route operated by Washington State Ferries (WSF) makes eight round-trips daily, weekdays only. The first sailing departs Vashon at 5:20 AM and the last sailing departs Seattle at 8:35 PM. The service is primarily intended for commuters, though several of the sailings fall outside of the primary peak periods, making limited use for non-commute trips more viable. There is a five hour gap in service in the midday. During the morning and afternoon peaks, the 35-minute sailings run approximately every 80 minutes. Beginning in September 2005, service will be reduced to two round-trips per four-hour peak period.

Bremerton-Seattle

The Kitsap Ferry Company provides four round-trip sailings each weekday – two in the morning peak and two in the evening peak – between Bremerton and Seattle. This is strictly a commute service. The first departure leaves Bremerton at 4:50 AM and the last departure leaves Seattle at 5:20 PM. There is approximately a two hour gap between the first and second morning sailing, and a similar gap between the first and second afternoon sailings. The crossing currently takes 40 minutes, but Kitsap Transit is working to procure new low wake vessels for the route that will be able to make the crossing in only 30 minutes.

Kingston-Seattle

Aqua Express provides five daily round-trips for commuters between Kingston and Seattle on weekdays. Service on the 40-minute crossing begins from Kingston at 5:30 AM. There are three morning sailings from Kingston and three afternoon sailings from Seattle. In the morning, the Aqua Express makes two round trips and then a third one-way trip from Kingston to Seattle. The vessel stays docked in Seattle until the first sailing of the evening commute. The last departure is 6:20 PM from Seattle. The time between departures is approximately 100 minutes, with a six-hour gap in the midday.

Elliott Bay Water Taxi

The Elliott Bay Water Taxi has been operated, in various forms, by King County Metro most years since 1997. Typically, the service has been offered in the summer only. In 2001-2002, the route

was operated year-round. Ridership dropped dramatically in the cold weather months, confirming that demand is seasonal (May through September). The Elliott Bay Water Taxi is primarily used for recreational and work trips. Recreational demand is particularly seasonal. In 2001, recreational trips comprised over 50% of the summer trips, but only 25% of winter trips. Ridership October through April was only a quarter of summer ridership. The Elliott Bay Water Taxi does not have ongoing funding. It has been funded by one time funds identified during the King County budget process. The Elliott Bay Water Taxi is funded for the 2005 season (May 1, 2005 through September 30, 2005.

The Elliott Bay Water Taxi is an all-day service, with approximately 15 daily round-trips Monday through Thursday, nearly 20 round-trips on Friday, and 11 to 15 daily round-trips on Saturday and Sunday, respectively. Monday through Thursday, service is offered from about 7:00 AM to 7:00 PM. On Friday, service extends to 11:00 PM. Saturday evening service also continues to 11:00 PM, but the first sailing on Saturday is not until 8:30 AM. Sunday service begins at 8:30 AM and ends at 7:00 PM. Ferries departed every 40 to 60 minutes, with a two hour refueling gap in the midmorning on weekdays. Crossing time is approximately twelve minutes.

2.4.1.2 Operating Entities

Vashon – Seattle

On the Vashon – Seattle route, WSF employees operate the vessels, operate and maintain the terminals, and perform routine maintenance on vessels. Major vessel repair work is contracted out. There are no concessions onboard and only vending machines at the terminals.

Bremerton – Seattle and Kingston – Seattle

Kitsap Transit has joint development agreements with Kitsap Ferry Company and Aqua Express. In the most basic interpretation of the agreements, Kitsap Transit is responsible for service infrastructure and the private operators are responsible for service operations. The actual arrangements are more complicated, and the agreement is evolving as the services become established.

Vessel operations and maintenance are both done by the private operators. Once a year, Kitsap Transit maintenance staff inspect the vessels. Kitsap Transit maintains and operates the Bremerton and Kingston terminals. The Seattle terminal is operated and maintained by Argosy Cruises.

Onboard concessions are staffed by Kitsap Ferry Company or Aqua Express employees. Each vessel's crew consists of three crew members responsible for vessel operations and two crew members for the food service. All crew members are trained for emergencies, giving the vessel a total of five crew members to manage emergencies. The Downtown Seattle terminal for both Kitsap Ferry Company and Aqua Express is privately controlled and operated.

Elliott Bay Water Taxi

For the Elliott Bay Water Taxi, vessel operations are contracted out to Argosy Cruises. Argosy maintains and operates the Downtown Seattle terminal. The West Seattle terminal is owned and maintained by the City of Seattle. Concessions are available onboard.

2.4.2 OPERATIONAL COMPONENT ELEMENTS

The elements of operations consist of service schedule, operations and maintenance of vessels, operations and maintenance of terminals, and other factors that impact the day-to-day running of

the service. Determining appropriate elements for a given service is highly dependent on the characteristics of the route and markets to be served.

2.4.2.1 Service Frequency, Span and Number of Stops

The service frequency and span of service should be based on market demand with consideration given to regional policies on minimum acceptable levels of service. The demand may vary on each potential route and the different market segments that make up this demand will have different expectations with respect to service levels. More frequent service will be more attractive to riders, but will probably result in higher operating and capital costs. The determination of the service frequency will require a careful assessment of round trip time, definition of target markets and their potential demand and peaking characteristics, schedules of connecting services, and the availability of and competitiveness of other modes. There is no fixed formula to determine what the frequency should be on any given route.

Similarly, the span of service will be determined based on the level of demand for ferry service, operating cost and cost recovery targets.

The number of stops served by a given route should largely be determined by the type of trips served.

2.4.2.1.1 Frequency

≤ 15 minutes Service with a headway of fifteen minutes or less is considered very frequent. Ferries arrive with sufficient regularity that regular passengers may use the service without consulting a schedule, knowing that whenever they arrive (within the daily span of service) that they will not have long to wait for the next sailing. However, depending on the length of the route, maintaining this level of frequency may require several vessels. This level of frequency is often not economical, but may be viable on a route with high demand and/or a short crossing time (less than 15 minutes one way including dwell time at each end of the route). In general, shorter crossings are best matched with shorter headways.

15 ≤ 30 minutes Service every 15 to 30 minutes is still an attractive frequency for potential riders. For example, a commuter can know that even if they miss their intended ferry, at worst the wait is a half hour for the next sailing. However, more frequent service may equate to higher costs. Again, the question is whether the level of demand can support the frequency of service, and whether or not the length of crossing would require additional vessels to maintain the headway – potentially cost prohibitive.

30 ≤ 60 minutes When service headways are 30 to 60 minutes, the lack of frequent service may begin to hinder ridership. To attract riders and out compete other modes available to travelers, a ferry service may need to be significantly more competitive in terms of travel time, cost, and/or quality of the travel experience. The importance of service frequency is reduced if there are fewer alternatives available and considerable advantages to ferry service over alternative modes.

≥ 60 minutes A headway of over one hour can be considered in special circumstances. For example, off-peak service to a destination with relatively low demand but limited transportation alternatives may warrant infrequent service.

It may be possible to reduce frequency during the midday periods or on weekends if multiple ferries are required to maintain the peak period schedule. However, if a route operates with a single vessel the savings that could be achieved by having the vessel sit at dockside every other trip would be limited to fuel and maintenance costs, unless it were possible to reduce labor costs through split shifts.

2.4.2.1.2 Span

The span of a service is the number of hours during which the service operates.

Peak Period Weekday — Peak period service primarily serves the commute market. The peak periods are driven by the times that most people arrive at and leave work. In King County, those periods are from approximately 6:00 AM to 9:00 AM and 3:00 PM to 6:00 PM, Monday through Friday. The span of commuter ferry services operating in the peak periods would be the peak periods plus the crossing times for the first morning trip and the last evening trip. Additional earlier sailings can expand the potential market and additional later sailings can provide added assurance for commuters who may have to work late.

All Day Service — All day service tends to serve two primary markets beyond the commute market: it provides mobility options and recreational transportation. All day service at its most basic fills in the gap between the peak-periods on weekdays, providing service from approximately 6:00 AM to 6:00 PM. All day service provided on the weekends typically begins later in the morning than on weekdays. Service can be offered into the early evening (7:00 PM to 8:00 PM) to accommodate such activities as after work errands, or into the late evening (10:00 PM or later) if significant evening activity warrants the service. Friday and Saturday night tend to generate the most late night trips.

Special Event — Additional or special service can be provided to serve special events. The timing, frequency and span of service would depend on the event being served. Marketing is particularly important for special event service, especially if the service is provided at a time that the ferry does not normally operate. The size of the vessels serving a route and the round trip time for the route may limit the opportunity to provide any significant amount of service for special events.

2.4.2.1.3 Number of Stops

In most cases, ferry services should be direct point-to-point serving only one origin-destination pair. Unlike a bus, which can slow down relatively quickly, pull over to the curb to let passengers off, and then reenter traffic, ferries must go through a much more complicated process – including extended deceleration, mooring, loading and unloading passengers – which can add significant delay to a trip. Commuters are particularly sensitive to this added delay. The impact of this delay is most severe for large, fast vessels with complicated mooring and many passengers. The delay would be proportionally smaller for small, low speed vessels with simple mooring requirements.

Multiple stops may be appropriate for routes primarily serving tourist markets or where geography dictates that it is most logical to have a route with multiple stops (such as WSF's passenger-vehicle service to the San Juan Islands). Examples of ferry operators with routes with multiple stops include the Victoria Harbour Ferry Company, New York Water Taxi, and Sydney Ferries Corporation.

Whether a route has multiple stops or not should be driven by operating considerations and market acceptance.

2.4.2.2 Operational Constraints

Certain man-made or natural forces can constrain the potential service schedule on an occasional or on-going basis. Primary among these are the impacts of speed limits, congestion, weather, and tides.

2.4.2.2.1 Speed Limits

Speed limits are imposed on certain water bodies to address wake/wash concerns or to help ensure safe operations when there is significant vessel traffic or poor visibility. Seven knots is the controlling speed for Lake Union, Portage Bay, the Ship Canal, and passages under the floating bridges on Lake Washington. Speed is not limited on Lake Washington, except near the shoreline and the approaches to the floating bridges. Speed is also not limited on Puget Sound, including Elliott Bay, but vessel movement is subject to direction by a Vessel Traffic System (VTS) operated by the U.S. Coast Guard.

2.4.2.2.2 Congestion

Delays due to marine traffic are more likely to occur on ferry routes that must pass through narrow channels or waterways such as the approach to Lake Union.

Marine traffic congestion in Elliott Bay is generally not expected to be a problem, but occasional delays may be expected as a result of general traffic conditions.

2.4.2.2.3 Weather and Tides

Rough seas caused by high winds can impact ferry schedules as well as affect rider comfort and increase the occurrence of sea-sickness among passengers. The number of days where service must actually be cancelled will depend on the actual exposure and the vessel design. Fog can also disrupt service, causing slower speeds that delay or disrupt schedules.

Tides are unlikely to disrupt service unless there are terminals with minimum draughts. However, strong tides can impact schedules on tightly scheduled services.

There is little that can be done to alleviate the impacts of weather, rough seas and tides on on-time performance. However the selection of terminal locations and decisions regarding the hull design can make a difference. Compared with unprotected terminals, sheltered terminals allow vessels to operate in sea conditions that would otherwise prohibit safe docking. Specific hull designs may perform better in rough sea conditions, however there may be tradeoffs for speed, fuel consumption, and wake/wash.

2.4.2.3 Vessel Operations and Crewing

The largest operating cost for ferries is usually labor. Ferries must have a licensed operator plus a varying number of crew depending on the number of passengers carried and the arrangement of the vessel and its equipment. Crew licenses are issued and regulated by the U.S. Coast Guard. The U.S. Coast Guard must inspect and approve all marine operations and certify the operating plan of the ferry operation. The U.S. Coast Guard must also approve the crewing configuration to be deployed. Marine crewing is highly regulated and proscribed by the U.S. Coast Guard and there is little flexibility on minimum requirements.

All of the vessels that would likely be suitable for potential passenger-only service in King County would be designed to measure less than 100 gross tons and be regulated under 46 CFR Subchapter T (150 passengers or less) or 46 CFR Subchapter K (more than 150 passengers). The Master is the only crew member who must be licensed or qualified onboard these classes of vessel. Other crew members may be unlicensed and do not need to hold any specific qualifications issued by the U.S. Coast Guard such as Able Seaman or Lifeboatman. Thus deck crews on small passenger vessels do not need any specific work experience or testing prior to being employed onboard.

2.4.2.3.1 Crew

Vessel design can impact crew requirements. The size and configuration of a vessel, the speed and the environment in which it operates are all taken into consideration in how a ship must be crewed and equipped. For planning purposes, small passenger vessels require a Master and one crew member for each passenger deck. In addition, the U.S. Coast Guard may require one additional crew member for every 200 passengers. Therefore, a 350-passenger vessel with two passenger decks requires a Master and four crew members – one Master plus two crew members for each of the two decks and two crew members for each set of up to 200 passengers.

Wage rates vary depending upon the employer and the position. For example, the ferry crews for Whatcom County are county employees. Their compensation is governed by a collective bargaining agreement with the International Organization of Masters, Mates, and Pilots, and with the Inland Boatman's Union of the Pacific. Currently, the hourly wage rates are a $25.18 for a Master and $18.97 for a deck hand, not including benefits. If benefits are added to these basic rates at a ratio of 60% of hourly wage, the costs come to $40.28 and $30.35 respectively.

By contrast, Pierce County contracts out the operation of their ferry to a private operator, currently Pacific Navigation Company. Pierce County pays fully burdened hourly rates of $38.00 for a Master and $22.00 for a deck hand, or 94% and 72%of the Whatcom County rates.

Crew Requirements by Vessel Classification

≤ 49-passenger vessels	Most small commuter launches and water taxis operating on dedicated runs require only a single person as crew. The individual would have to hold a license as Master of Steam or Motor Vessels of not more than 100 gross tons. The job would entail handling multiple functions including fare collection, piloting the boat, assisting passengers and docking.
50 ≤ 149-passenger vessels	A ferry with a capacity of between 50 and 149 passengers would be required to carry one Master and one or two crew members depending upon the number of decks and the Master's ability to observe and direct the passengers on one deck. Typically, the vessel Master is responsible for safe navigation of the vessel while the deck hand(s) handle ticketing and mooring lines and assist passengers in the event of an emergency.
≥ 150-passenger vessels	On larger vessels, one of the deck crew may be given the additional responsibility of periodic inspection of the machinery spaces. The U.S. Coast Guard does not require passenger vessels under 100 gross tons to carry a licensed engineer unless the vessel has "large main and auxiliary engineering systems, multiple decks, extended routes, or other similar conditions." Some operators, such as Pierce County, require by contract that this person be a qualified rating (Able Seaman) with an endorsement as a Qualified Member of the Engine Department (QMED).

2.4.2.3.2 Shifts

The work hours for crew members are governed by Title 46 of the United States Code, which imposes the following requirements:

- Paragraph (a) - "an officer (may take charge of a navigation watch)… only if the officer has been off duty for at least 6 hours within the 24 hours immediately before…"

- Paragraph (b) - "A licensed individual may not be required to work more than 9 of 24 hours when in port, including the date of arrival, or more than 12 of 24 hours at sea, except in an emergency…"

These work rules have been interpreted by the U.S. Coast Guard in Chapters 20 and 24 of the Marine Safety Manual to mean that a crew member on a day boat operation may not be required to work more than 12 hours in a day, from the time of arrival on the vessel to the time of departure. In the Marine Safety Manual it states: "A twelve hour work day, applied in a manner similar to the work-hour limit for tankers (maximum of 15 hours in a day and 36 hours in a 72 hour period) is considered a reasonable work-hour limit for other classes of vessels. After the I-520 bridge collision, the Commandant of the U.S. Coast Guard issued a policy letter that re-emphasized the work-hour limitations. Ferry operators therefore need to find a schedule and crew mix that provides safe operation at an acceptable level of cost.

The number and types of shifts required depend on the span of service. Peak-period service is most economically served by a split shift, as 6 to 8 hours of service may be spread over 12 to 14 hours of a day with two distinct morning and evening portions. All day service often necessitates multiple shifts, particularly if the service is offered seven days a week.

2.4.2.4 Other Vessel Operating Costs and Considerations

2.4.2.4.1 Fuel

Fuel will likely be the second largest operating cost. Fuel consumption for a ferry is very sensitive to speed, hull design, sea conditions and weather (wind). It is much more variable than for land transportation, and ferries of 150 passengers or less require more energy than buses or trains to move each passenger one mile. Fuel cost becomes less of an issue if the route that a ferry operates is significantly shorter than the alternative land route.

New Federal Regulations that come into force in 2007 (U.S. EPA Tier II standards) will impose strict emissions regulations on marine engines. However, even with these regulations, marine engines will still be among the most polluting mobile sources in urban areas on a passenger mile basis. Alternative fuels such as fuel cells or natural gas are unlikely to be approved by the U.S. Coast Guard for passenger ferry operation for some time. In San Francisco, the new Vallejo Baylink Ferry SOLANO is equipped with Selective Catalytic Reduction (SCR), reducing NO_x emissions by approximately 50%. This system increases capital and operating costs, but is available now.

There are several fuel options available for small boats. Diesel and gasoline engines may be used. Several suppliers also have innovative electric and solar systems available. The first False Creek Ferry in Vancouver was battery powered, and the current operation in Marina del Rey, CA uses a solar powered vessel.

2.4.2.4.2 Vessel Maintenance

Maintenance costs are usually estimated at about 25% of the cost of fuel consumed. This figure includes preventative maintenance, routine running repairs and annual inspection.

In-House In-house maintenance may be necessary if the vessels incorporate unique or proprietary technology. In-house maintenance may also be necessary to meet a 99% reliability standard that is desirable for ferry operations.

Major inspections and repair can be handled in-house only if the fleet is large enough to create a steady workload for maintenance staff.

Daily running maintenance can be handled by the operator of the ship, whether public or private sector.

Contracted Some functions such as an annual hull inspection, engine rebuilding, or repairs of specialized equipment can be contracted.

Major maintenance, including engine replacements or annual inspections, should be contracted out.

2.4.2.4.3 Insurance

There are two types of marine insurance that must be considered:

Hull and Machinery Hull and machinery insurance is based on the cost of the ship and is generally easy to estimate.

Liability and Indemnity Liability and indemnity insurance is more complex and is based on the entire operation and the number of passengers carried. This insurance has become more costly and is best obtained through pool arrangements similar to transit insurance pools.

2.4.2.5 Terminal Operations and Maintenance

Ferry terminals may be owned and operated by the ferry operating agency or another government agency or a private company.

The operational requirements for each terminal will depend on the nature of the service, number of passengers, and frequency of sailings. Staffing of the terminals may not be necessary.

Terminal staffing needs depend on several factors such as the sailing schedules, the provision of customer services, collection of fares, the need to assist disabled passengers, and vessel tie-up activities.

For very small operations, with minimalist terminals and one crew member per vessel, the captain of the vessel can handle all ticket collection, customer service, and mooring tasks. No terminal staff are needed.

At approximately 100 passengers per sailing, collecting cash fares as passengers board the vessel can begin to significantly delay the boarding processes. At this point it is preferable to have passengers purchase tickets before boarding. Terminals can either be supplied with ticket vending machines or staffed ticket booths.

For major terminals that support frequent, high volume routes or multiple routes, several staff positions may be appropriate, including ticket sales (which can also provide customer service) and a terminal manager. Depending on the vessel mooring technology, dockhands may also be needed. The presence of staff at the terminal can also contribute to patrons' sense of safety.

2.4.2.5.1 Multimodal Connections

The operations of multimodal connections, particularly transit connections, should be matched to the character of the operations of the ferry route. For routes with a greater than 15 minute headway, and terminals that are not within walking distance to major destinations, there should be timed transfers between ferries and transit. Preferably, buses set to meet the ferries should wait at the terminal until after the passengers have disembarked, ensuring that ferry riders will make their transit connections even if the ferry is late. Timed transfers may not be necessary for frequent ferry service matched with frequent bus service (less than a 10 to 15 minute wait), if most ferry passengers' final destinations are within walking distance of the terminal, or if the terminal is located in a significant transit hub (such as Downtown Seattle).

2.5 Revenue Sources and Financing Approaches

Revenue Sources and Financing Approaches includes both the monetary resources available to support the terminals, vessels and operations and the processes needed to generate and manage these monetary resources, including the ability to impose taxes, engage in bond sales, charge fees for services, and obtain grant funds.

2.5.1 CURRENT ENVIRONMENT

Three different governmental agencies in the region transport walk-on passengers into, out-of, and within King County, and the financing approach and revenue sources employed by each is determined by the entities involved and the financial authorities available to them.

2.5.1.1 Washington State Ferries

On July 1, 2005 a new organizational structure for the Department of Transportation and one of its division's, Washington State Ferries, was implemented. Historically the Transportation Commission has held secretarial appointment authority and oversight over the Department. During the 2005 session, the Legislature made the Governor directly accountable for the Department and made the Secretary of Transportation a cabinet level official appointed by the Governor with the consent of the Senate. The Commission continues to act as a policy board, conducts studies, and has responsibility for establishing a schedule of tariffs for WSF and tolls for highway projects. The Department has become a code agency and as such no longer submits an independent budget request to the legislature. WSF's capital and operating funding is subject to legislative appropriation and executive allotments. The tariff schedules (user fees) for the ferry system are set under statutory authority delegated to the State Transportation Commission. However, the revenue raised through the user fees is deposited in the state treasury and remains subject to legislative appropriation. Fare revenue and other customer revenue such as concession revenue support approximately 79% of WSF's operational costs. The subsidy required to cover the cost of operations is provided from legislative appropriations of dedicated state tax sources (state motor fuel tax, vehicle license fees and the State Motor Vehicle Fund). To support its capital program, WSF relies on bond receipts, the State Motor Vehicle Fund, federal funding sources and other minor miscellaneous revenue sources, all subject to legislative appropriation.

2.5.1.2 King County

The financial structure for the Elliott Bay Water Taxi is comprised of user fees (fare charges) and a subsidy from the King County Transit Division operating budget. The City of Seattle allows use of city owned Seacrest dock in West Seattle, limiting the county's capital outlay. The vessel contractor provides the remaining capital assets and operational staffing through a contractual arrangement with King County.

2.5.1.3 Kitsap Transit Benefit Area

Kitsap Transit, a Public Transportation Benefit Area (PTBA), has entered into joint development agreements with two private ferry operators. The financial structure assumes most of the costs to be borne by the private operator, including terminal and vessel capital costs as well as operations, with financing assistance for terminal development and construction from Kitsap Transit. As the program grows, it is anticipated that Kitsap Transit will seek public funding sources such as federal grants to expand the overall capital assets, including the provision of new vessels. The approach of the joint agreement is to structure the public financial contribution for capital elements and supporting transit services and focus the private responsibility on the vessel operating program. The private firms will recapture their operating and capital costs through user fees.

2.5.2 REVENUE SOURCES AND FINANCING APPROACHES COMPONENT ELEMENTS

The interdependence between the governance structure and the financial structures are profound; typically the governance approach influences greatly the type of financial structure employed. Three broad categories can be explored: public, private, or a public/private combination. Under each category, options are identified for the two major financial component elements: revenue sources and financing approaches.

2.5.2.1 Public Funding Options

Under the public funding option, a service delivery system could employ revenue sources such as taxing, fares or fees, concession revenues, grants or revenue received from other public entities. Available financing approaches might be pay as you go bonding or the sale of depreciation rights.

2.5.2.1.1 Revenue Sources – Public

Taxes

The ability to levy taxes allows a public entity to develop a stable and reliable public financial structure for its capital and operating program. There are a variety of taxes authorized for support of a waterborne transit program. Details regarding their advantages and disadvantages are found in Technical Memorandum 5. The following is a listing of current authorities.

County Ferry District Authority authorizes the assessment of ad valorem property tax of 75 cents per thousand dollars of assessed value within the ferry district boundary. This requires Council approval but no public voting requirement. Predicted yields on the ad valorem property tax at various levy rates are displayed on the following page in Exhibit 2-2.

King County Transit Authority has 1/10th of one percent sales and use tax authority left. This would require Council approval and an affirmative public vote.

Public Transportation Benefit Areas have the right to seek voter approval for Motor Vehicle Excise Tax and Sales and Use Tax to the amount of up 4/10^{ths} of one percent for each. However, the process of establishing a PTBA is cumbersome and its taxing authority would be severely limited if the PTBA boundaries included area within the Regional Transit Authority boundary.

State Legislature has the authority to appropriate funds for local transit projects such as a County waterborne transit service.

The following exhibit predicts the likely tax yield at 2006 expected property valuations on an ad valorem property tax at various levy rates up to the full 75 cents per thousand of assessed valuation authorized by statute. Assessed valuations are reported by council district and for Vashon Island, which is a geographic sub unit of District 8. Counties may form a ferry district for all or any portion of the area of the county.

Exhibit 2-2: Predicted Yields of Ad Valorem Property Tax Based on 2006 Assessed Value

Expected 2006 Assessed Value		Rate Per $1,000				
		$0.01	$0.10	$0.25	$0.50	$0.75
1st District	$24 billion	$240,000	$2,400,000	$6,001,000	$12,001,000	$18,002,000
2nd District	$27 billion	$268,000	$2,683,000	$6,709,000	$13,417,000	$20,126,000
3rd District	$34 billion	$341,000	$3,414,000	$8,534,000	$17,068,000	$25,601,000
4th District	$34 billion	$343,000	$3,429,000	$8,572,000	$17,145,000	$25,717,000
5th District	$20 billion	$199,000	$1,990,000	$4,974,000	$9,949,000	$14,923,000
6th District	$42 billion	$421,000	$4,206,000	$10,514,000	$21,028,000	$31,541,000
7th District	$17 billion	$170,000	$1,703,000	$4,257,000	$8,514,000	$12,771,000
8th District	$25 billion	$250,000	$2,503,000	$6,257,000	$12,515,000	$18,772,000
9th District	$24 billion	$245,000	$2,449,000	$6,124,000	$12,247,000	$18,371,000
Total Countywide	**$248 billion**	**$2.5 million**	**$25 million**	**$62 million**	**$124 million**	**$186 million**
Vashon Island	***$2 billion***	***$19,000***	***$186,000***	***$464,000***	***$929,000***	***$1,393,000***

Fares

The ability to determine the fare structure and the level of user fees is an important element for the financing of the operating program. These charges are best characterized as the price paid to access the transportation service and usually take the form of boarding fares. Fare authority can be assigned to a particular governmental structure or delegated to Commissions or Boards like the State Transportation Commission. Fares may be independent, or integrated with other regional transit services. Integration can increase ridership and reduce the penalty of transferring between modes; however, it can reduce the effective per passenger fare revenue.

Concessions

The ridership created by a waterborne transit service can create a market for commuter and retail services. The transportation provider can directly market convenience and retail items such as food, drink, gifts, and souvenirs and realize profits, or contract with a private vendor for payments associated with its concessionaire operation.

Grant Funds

Grant funds can be obtained from private and public entities. Public ferry operators commonly look to the federal government for grant opportunities such as the Ferry Boat Discretionary (FBD) fund, Federal Transit Administration's Section 5309 Bus Capital program, Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement (CMAQ), and Transportation Security Administration's Port Security Program. Some federal highway and transit funding, known as new starts funding, is earmarked at the national level for specific local projects. Also, some regional opportunities for access to discretionary monies come through the Puget Sound Regional Council, a recipient of federal monies. Technical Memorandum 5 provides a more complete display of available grant funding opportunities.

Entities that disburse grants, public and private, often condition the types of organizations that are eligible to receive the grants. Therefore, in order to utilize these sources for monetary resources it is necessary to possess the necessary institutional structure dictated by the granting authority.

Revenue Transfers

It is common for one governmental entity to transfer revenue to another governmental entity to accomplish a specific policy objective or to deliver a program or service. A revenue transfer might be employed to acquire capital assets or to support operations and can be an effective form of partnership between two public entities. There needs to be a clearly established benefit for such a transfer and transferred funds must be used for a purpose that is compatible with the revenue authority.

Asset Leasing or Contracting

Public owned assets can be leased to generate revenue from another entity's use of a public agency's assets.

Federal Earmarked Allocations

The Federal Government's TEA-21 Authorization annual set aside of $5 million for the Washington State Ferries capital program is a good example of an earmarked allocation. The Federal Transit Administrative formula funding benefits all the transit property within the Puget Sound Regional Council distribution and is a formula driven earmark of funds earned by percentage of regional service provided.

Enterprise Zone Revenue / Developer Fees — In some parts of the country, properties surrounding major transit centers are identified as enterprise zones. Private developers that do business in the zone are charged developer fees to help pay for the transit capital projects.

2.5.2.1.2 Financing Approaches – Public

Bond Authority — Bond authority is a very useful tool for financing long-term capital assets. The governance structure must have a specific legal authority to enter into the bond market and take advantage of debt financing. Bond sales are normally backed by pledged user fees or an on-going general tax source of revenues. In practice, waterborne transit operations would likely be required to pledge financial assets in excess of those generated through user fees.

Asset Encumbrance Authority — Other forms of financing are available. These can be complex arrangements with private entities by, in effect, trading tax benefits or asset ownership for monetary resources.

Leasing / Purchasing Authority — Public entities normally have the authority to lease (use an asset for a specific period of time for a fee) or purchase (buy an asset outright). Public entities often have constraints on the use of leasing / purchasing authority.

Contracting Authority — The limits placed on contracting authority powers impact the magnitude and type of financial arrangements for the operating and capital components. For instance, bidding procedures are often dictated for governmental entities precluding strictly negotiated agreements. Some entities have total price caps that cannot be exceeded, while others exclude the ability to contract out for operational staff.

Partnership Authority — Certain statutory arrangements create the flexibility for a public agency to enter into financial arrangements with other governmental or private entities through various types of arrangements.

2.5.2.2 Private Funding Options

A private provider could have access to the following operating revenue sources: fare or fee revenue, albeit often subject to regulation; concessionaire; and limited access to grants. Available capital financing approaches might be: bonding and deficit financing through the private market without municipal bonding tax advantages, lease/purchasing, and contracting.

2.5.2.2.1 Revenue Sources – Private

Fares or Fees — In Washington State, fares charged by private ferry operators are regulated by the Utility and Transportation Commission (UTC). The amount of actual allowable profit is controlled through this process.

Concession Fees — The ridership created by a waterborne transit service can create a market for commuter and retail services. The private transportation provider can directly market, or contract for the marketing of, convenience and retail items such as food, drink, gifts, and souvenirs. Concession revenue is realized from direct profits earned, or through a concession fee remitted by the contractor.

Grant Funds The grant funds available to private operators are more limited than those available to public agencies. For example, private operators do not have access to federal grants.

2.5.2.2.2 Financing Approaches – Private

Bond Authority Private entities are able to capitalize projects through the sale of bonds. These are subject to market rates and generally have no tax advantages. Normally, this approach would be used by a very large private entity.

Debt Financing Authority The private sector has a variety of opportunities to secure debt financing. The assets that are pledged to refund the debt may include real property as well as financial resources and the timelines can be flexible. The public sector is basically limited to use of bonding as the primary debt financing tool.

Leasing / Purchasing Authority The private sector can be very efficient and effective in the use of these tools. They have the ability to make these arrangements in any manner that is beneficial to both parties, in contrast to limitations often placed on public entities.

Contracting Authority The private sector has unlimited flexibility in arranging contractual agreements. In contrast, public entities typically must comply with non-flexible contract requirements. Included are such issues as requirements to bid publicly vs. negotiating with a chosen entity, requirements to award contracts to lowest bidder, and requirements to comply with rules addressing such issues as promoting minority and women-owned businesses.

Private Financing This is intended to encompass the normal techniques employed by the private sector. Generally, the major income source is the user fees charged for the service. Three basic legal forms are commonly employed

1. *Corporation*
   A corporation is a legal framework employed by private operators to conduct business and prescribes the manner in which the business organization can access capital and conduct its business.

2. *Private Partnership*
   This is another legal form for establishing a private business and related financial structure.

3. *Sole Proprietorship*
   This is the least complex form of establishing a private business and related financial structure and is unlikely to provide access to the capital necessary to operate a waterborne transit system except in rare cases involving great individual wealth or very limited operations.

2.5.2.3 Public / Private Combination Funding Options

With access to all of the financial authorities, this is the most flexible structure that can be created, drawing on the most advantageous elements available to both the public and private sector

All revenue sources and financing approaches available under the public option and the private option are available to the public/private combination.

The challenge in creating a public private option is determining which financial authorities in what combination forms the most attractive and feasible structure. The inherent and imposed limitations of each element must be considered. The creation of a financial structure therefore is shaped not only by the availability of given authorities but by the flexibility of that particular authority.

2.5.2.4 Major Project Construction Mitigation

At the March Stakeholder Workshops, construction mitigation was raised as a potential funding source and rational for possible ferry routes. With upcoming construction on the Alaskan Way Viaduct, SR 520, and other major regional roadways, there may be increased demand for waterborne transit and some potential for construction mitigation funding. One upcoming example of this approach is the planned provision of ferry service across the Hood Canal during the bridge renovation project.

3. SERVICE DELIVERY SYSTEM OPTIONS

To illustrate the range of potential partnership options, four service delivery systems have been constructed based on varying levels of potential public and private participation. At one end of the spectrum, with the least King County involvement, is Private Operation Public Endorsement – where all major responsibilities would be undertaken by the private sector and the public role would primarily consist of political and technical support – and at the other end of the spectrum, with the highest degree of King County involvement, is Public Ownership and Operation – where all elements of service delivery would be the responsibility of King County and any potential public sector partners, and the private sector would play virtually no part. Between these two ends are two models of public private collaboration, Public Private Joint Development and Public Ownership with Contracted Operations. Each of the four service delivery systems is laid out in terms of the key component elements that would fit into that service delivery system.

3.1 Option 1 – Private Operation Public Endorsement

3.1.1 ENTITIES AND POTENTIAL ROLES

1. King County would endorse private development of a waterborne transit service, characterized by the use of small passenger vessels requiring limited terminal facilities, and operating a regularly scheduled or on demand waterborne transit service.

    a. King County could coordinate with the private operator for the availability of land transit services near the private dock locations.

    b. King County with other public partners could enter into an agreement for use of common fare media such as SmartCard.

    c. King County and/or municipalities served by the proposed service could assist the private operator to secure public or private docking arrangements including technical assistance with permitting processes.

2. The Washington Utilities and Transportation Commission (UTC) would be the regulatory authority for the private operators serving the route.

    a. Any commercial service other than a strict charter operation not operating between fixed points comes under the jurisdiction of the UTC.
    "*No commercial ferry may hereafter operate any vessel or ferry for the public use for hire between fixed termini or over a regular route upon the waters within this state, including the rivers and lakes and Puget Sound, without first applying for and obtaining from the commission a certificate declaring that public convenience and necessity require such operation." (RCW 81.84.101(1))*

    b. King County and other local governments could support the private operator in the UTC certificate application process.

3.1.2 FACILITIES AND VESSELS

1. King County would not provide any vessels or terminal facilities but King County and other jurisdictions such as a city or port district could choose to provide technical support and endorsement of the private operator during the facility development process.

2. The private operator would purchase, lease or enter into some other landing fee arrangement for all docks with a public agency, such as a city or port district, or a private owner, including a developer or employer who may wish ferry service for their tenants or employees.

3. The private operator would purchase or lease all required vessels and operating equipment.

3.1.3 OPERATIONS

1. Operation and maintenance of all vessels would be the responsibility of the private operator. Maintenance of docks would be the responsibility of the private operator or addressed in another method identified in the agreement with the dock's owner.

3.1.4 REVENUE SOURCES AND FINANCING APPROACHES

1. Funding and financing of the service would be entirely the responsibility of the private operator.

2. The private operator fares would be established through the UTC certification process.

3. King County would not offer any form of operating subsidy.

4. Cities, private developers or employers could choose to help fund some level of service to support economic development or employee mobility.

5. The private operator would recover all costs of capital and operation through fare and other operating revenues including concessions, advertising fees, and charters.

3.2 Option 2 – Public Private Joint Development

3.2.1 ENTITIES AND POTENTIAL ROLES

1. King County would be the lead governmental authority for overall service design and implementation and would enter into agreements with local jurisdictions and private operators.

2. The UTC would be the regulatory authority for the private operators serving the route.

3. King County would enter into a public private joint development agreement with a UTC certified private operator to cover:

    a. Minimum service levels.

    b. Terms for possible subsidy of midday, late-night or weekend service.

    c. Extension of regional fare collection to the waterborne transit service.

    d. Possible provision of vessels, shore-side, and upland facilities.

    e. Provision of land based transit connections.

    f. Use of terminal facilities for non-transit purposes.

    g. Buy out provisions if the private operator shuts down.

4. A city or port authority within King County would be the lead governmental entity for terminal siting, development and funding.

    a. King County would enter into an inter-local agreement with the city or port to jointly develop terminal facilities.

        i. The agreement would cover design criteria for vessel docking, passenger processing, uplands facilities and transit connections.

        ii. The agreement would address responsibility for pursuing grant funds and the parties' responsibility for the required local fund match.

        iii. For any routes with a terminus on the Seattle central waterfront, King County might choose to enter into agreement with the Port of Seattle (POS), Washington State Ferries, the City of Seattle, Kitsap Transit, and potential private partners to jointly develop a central waterfront passenger dock.

3.2.2 FACILITIES AND VESSELS

3.2.2.1 Terminal and Upland Facilities

1. The governmental partners would be responsible for the provision of docking, terminal and uplands facilities in the manner outlined in an inter-local agreement and the joint development agreement.

    a. As a transition strategy, a private dock, such as those currently in use on the Seattle central waterfront, could be employed until a publicly developed dock could be completed.

2. Routine maintenance and repairs could be delegated to one of the governmental partners or the private operator could be compensated for providing them.

3. Management of major maintenance could be delegated to one of the governmental partners.

3.2.2.2 Vessels

1. There would be two possible options:

    a. The private operator could provide the required vessels.

    b. King County could provide the vessels.

        i. Initially the private operator could potentially provide the vessels with King County designing and building a fleet over time.

2. Maintenance could be included as the private operator's responsibility or contracted separately. If the private operator were to supply the vessel, it would be responsible for vessel maintenance.

3.2.3 OPERATIONS

1. At its sole expense, the private operator partner would provide all vessel and docking staff.

2. Terminal commuter services, if desired, could be operated by the private operator and become a part of its gross revenue or operated by another contractor on a fee basis with the proceeds to be either split between governmental and private partners or assigned to the public partners.

3. King County could manage multi fare sales and collection while single fare purchases could be handled by the private operator or though vending.

4. Vessel concessions would be provided by the private operator.

3.2.4 REVENUE SOURCES AND FINANCING APPROACHES

1. Cities, other municipalities such as port districts, and King County could develop a joint funding formula for the local match portion of the cost.

    a. Local match might require a new revenue source such as described in #6 below.

2. The agency partners could designate one agency to prepare applications and administer construction grants for terminal facilities.

    a. If one of the termini would be on the Seattle central waterfront, WSF might also participate in construction and funding of a joint use docking facility.

3. The agency partners could collect landing fees from operators, or might consider provision of a docking facility to be a form of subsidy to the private operator.

    a. If landing fees were to be collected, they might be applied to other eligible capital projects or to fund the cost of other waterborne or land based transit services.

4. If the vessels would be publicly owned, King County would prepare grant applications and administer grant funds for vessel acquisition.

    a. If a lease fee were to be charged to the private operator for use of King County owned vessels, the lease proceeds could be applied to other eligible capital projects or to fund the cost of other waterborne or land based transit service.

5. The cost of operating the service would be the responsibility of the private operator partner. The private operator partner would set fare levels and other operating revenue fees. The operator's profitability would be regulated by the UTC.

6. Those waterborne transit services deemed to be a public responsibility could be subsidized by King County.

    a. The level of subsidy required would depend on operating route pro forma statements and how much a private operator could expect to generate from cruise and miscellaneous revenues.

    b. Services for which the public might be considered responsible could be all day service or commuter with midday service designed to support economic development.

    c. Cities, private developers or employers could choose to help fund some level of service to support economic development or employee mobility.

d. Diversion of existing revenues or a new authorized revenue source, such as sales, MVET, or property taxes, would be required if operating subsidies were required for the waterborne transit service, including maintenance of the vessels and shore side facilities.

3.3 Option 3 – Public Ownership with Contracted Operations

3.3.1 ENTITIES AND POTENTIAL ROLES

1. King County would be the lead governmental authority for overall service design and implementation and would enter into agreements with local jurisdictions for facility development and contracts with private operators for ferry operations.

    a. A UTC certificate would not be required, but if the potential King County route had already been awarded to a private operator through the UTC, King County would have to compensate the private operator for the taking of their certificate.

    b. Fares for waterborne transit would be established by the King County Council.

2. King County would contract with a private operator for a specific service program that would include:

    a. Established service schedule

    b. Crewing and maintenance

    c. Provision of vessels and shore side and upland facilities

3. King County – with or without other public partners such as Washington State Ferries, a local jurisdiction, or the Port of Seattle – would establish needed terminal facilities by securing the use of existing facilities or development of new facilities.

    a. Through an interlocal agreement King County and other public entities could jointly develop terminal facilities.

        i. The agreement would cover design criteria for vessel docking, passenger processing, uplands facilities and transit connections.

        ii. The agreement would address responsibility for pursuing grant funds and the parties' responsibility for the required local fund match.

        iii. For any routes with a terminus on the Seattle central waterfront, King County might choose to enter into agreement with the Port of Seattle (POS), Washington State Ferries, the City of Seattle, and Kitsap Transit to jointly develop a central waterfront passenger dock.

3.3.2 FACILITIES AND VESSELS

3.3.2.1 Terminal and Upland Facilities

1. The governmental partners would be responsible for provision of docking, terminal and uplands facilities in the manner outlined in an inter-local agreement.

a. As a transition strategy a private dock, such as those currently in use on the Seattle central waterfront, might be employed until a publicly developed dock could be completed.

2. Routine maintenance and repairs could be delegated to one of the governmental partners who might contract for all or part of the maintenance or the private operator could be compensated for providing maintenance.

3. Management of major maintenance could be delegated to one of the governmental partners.

3.3.2.2 Vessels

1. There would be two possible options for provision of the ferry vessel(s):

   a. The private operator would provide the required vessels or

   b. King County would provide the vessels

      i. Initially the private operator could provide the vessels with King County designing and building a fleet over time.

2. Maintenance could be included in the private operator's contract or contracted separately. If the private operator were to supply the vessel, it would be responsible for vessel maintenance.

3.3.3 OPERATIONS

1. King County would contract with a private operator for all vessel and docking staff to the service levels defined by King County.

2. Terminal commuter services, if desired, could be operated by the private operator and become a part of its overall compensation package or operated by another contractor on a fee basis with the proceeds to be split between governmental partners.

3. King County could manage multi fare sales and collection while single fare purchases could be handled by the private operator or through vending.

4. The private operator could offer vessel concessions. Revenue could go directly to the private contract operator as part of their compensation package or could be shared in some manner with King County.

3.3.4 REVENUE SOURCES AND FINANCING APPROACHES

1. King County, together with other public partners, could develop a joint funding formula for the local match portion of the capital cost.

   a. Local match might require a new revenue source such as described in #6 below.

2. King County and other public partners could designate one agency to prepare applications and administer construction grants for terminal facilities.

   a. If one of the termini would be on the Seattle central waterfront, WSF might also participate in construction and funding of a joint use docking facility.

3. If the vessels would be publicly owned, King County would prepare applications and administer grant funds for vessel acquisition.

4. Cities, private developers or employers might choose to help fund some level of service to support economic development or employee mobility.

5. Fares, and hence the cost recovery rate for waterborne transit, would be set by the King County Council.

6. If funds to operate the waterborne transit service and maintain the shore side facilities and vessels could not be covered through the fare box and other non fare operating revenue or from existing King County revenues, additional revenue would have to be raised through a new revenue source such as sales, excise, or property taxes.

7. Concession income could go directly to the private contract operator as part of their compensation package or a concession fee could be paid to King County.

3.4 Option 4 – Public Ownership and Operation

3.4.1 ENTITIES AND POTENTIAL ROLES

1. King County would be the lead governmental authority for overall service design and implementation and would enter into agreements with local jurisdictions as necessary to develop shore side facilities.

    a. A UTC certificate would not be required, but if the potential King County route had already been awarded to a private operator through the UTC, King County would have to compensate the private operator for the taking of its certificate.

    b. Fares for waterborne transit would be established by the King County Council.

2. King County would be responsible for direct operation of all aspects of waterborne transit service.

3. A city or port authority within King County would be the lead governmental entity for terminal siting, development, and funding.

    a. King County would enter into an inter-local agreement with the city or port district to jointly develop terminal facilities.

        i. The agreement would cover design criteria for vessel docking, passenger processing, uplands facilities, and transit connections.

        ii. The agreement would address responsibility for pursuing grant funds and the parties' responsibility for the required local fund match.

        iii. For any routes with a terminus on the Seattle central waterfront, King County might choose to enter into agreement with the Port of Seattle (POS), Washington State Ferries, the City of Seattle, and Kitsap Transit to jointly develop a central waterfront passenger dock.

3.4.2 FACILITIES AND VESSELS

3.4.2.1 Terminal and Upland Facilities

1. The governmental partners would be responsible for the provision of docking, terminal and uplands facilities in the manner outlined in an inter-local agreement.

2. Routine maintenance and repairs could be delegated to one of the governmental partners or contracted to a private maintenance contractor.

3. Management of major maintenance could be delegated to one of the governmental partners.

3.4.2.2 Vessels

1. King County would lease or build vessels for the route.

2. Maintenance of the vessels might be included in the lease arrangement or, if King County were to own the vessels, minor maintenance could be accomplished by King County staff and major maintenance contracted to a private shipyard.

3.4.3 OPERATIONS

1. King County would crew the vessels and staff terminal facilities with directly employed staff and would be responsible for all administrative and management functions.

2. Terminal commuter services, if desired, could be operated by King County directly or contracted on a fee basis to a private firm.

3. King County would be responsible for fare sales and collection including single fare purchase.

4. If vessel concessions were desired, they could be operated by King County staff or a private firm on a fee basis.

3.4.4 REVENUE SOURCES AND FINANCING APPROACHES

1. The cities and King County could develop a joint funding formula for the local match portion of the cost of building shore side facilities.

    a. Local match might require a new revenue source such as described in #6 below.

2. The cities, port district and King County could designate one agency to prepare applications and administer construction grants for terminal facilities.

    a. If one of the termini would be on the Seattle central waterfront, WSF might also participate in construction and funding of a joint use docking facility.

3. King County would prepare the applications and administer grant funds for vessel acquisition.

4. Cities, private developers or employers might choose to help fund some level of service to support economic development or employee mobility.

5. Fares and hence the cost recovery rate for waterborne transit would be set by the King County Council.

6. A new revenue source such as sales, MVET, or property taxes would be required if the cost of waterborne transit, including operations and local grant match, could not be covered through the farebox and other non fare operating revenue or from existing King County revenues.

4. ASSESSMENT OF OPERATING MODELS

4.1 Option 1 – Private Operation Public Endorsement

Private operation with public endorsement would rely on the current regional maritime industry to define the route structure and level of service and to provide the full range of activities necessary for delivery of waterborne transit service. King County and other municipalities would have a limited role providing technical and political support to the privately operated service, but would assume no responsibility for the service offered and would not commit public funds to subsidize capital acquisition or operation of passenger ferry service.

4.1.1 ADVANTAGES

- The approach would minimize the financial impact to King County and would not divert current King County revenues from the County's transit commitments.
- There would be little or no risk to King County because the private operator would assume all financial and operating risk.
- If the service commitment could not continue due to lack of demand or poor financial results King County would not have to formally cancel the service.
- King County could endorse but not make an implementation commitment to provision of waterborne transit.
- This model of service (fee for service) would establish a principle of service provision that would enable transit and mobility service to be expanded in the region without general taxpayer involvement.

4.1.2 DISADVANTAGES

- Sustainability of the service is uncertain if not economically viable for the private sector.
- King County's ability to influence development of the service, and to coordinate service with overall King County transportation mission objectives would be limited.
- Without access to public resources for landside infrastructure, the probability of a successful service would be reduced.

4.1.3 KEY ISSUES, IMPLICATIONS AND IMPACTS FOR KING COUNTY

The advantage of this option is its focus on the private sector as the operator of waterborne service limiting King County's financial and implementation responsibility for the program and thereby making it both politically and financially attractive for those policy makers that are concerned about the growth of government and its need for revenue. With the ever growing problem of traffic congestion, citizens look to King County for leadership in dealing with transportation issues. Therefore, the county's public role would logically include encouraging more inter-urban transit options. King County would be expected to provide some administrative staff time. It is anticipated that the use of this option would have minimal impact on existing land transit services. There is no additional impact to King County programs should the waterborne program be successful.

The major drawback of this approach is the potential lack of private sector interest in providing the waterborne taxi service. Under this option, if the private operator and potential private partners did not believe a service would be economically feasible, it would not go forward.

A service implemented under this option would be in keeping with King County transportation objectives, but would not rise to the level of a direct King County transportation responsibility. Those types of transportation needs that would merit a more extensive county involvement would fit into the following three options as outlined below.

This option is clearly within the ability of King County to accomplish with minimal risk or responsibility when there is an economic incentive for a private operation. Unfortunately, the opportunities for privately supported transportation solutions are extremely limited and, hence, the potential to serve ridership minimal.

4.2 Option 2 – Public Private Joint Development

Public private joint development would combine the marine experience of a private sector operator with the transit experience of King County, who could provide a range of administrative and capital support. Both parties would need to be committed to the creation of a waterborne transit service. Other public entities, such as local cities or ports, could support the service by providing terminal facilities or funding.

4.2.1 ADVANTAGES

- This approach would allow King County to minimize financial and operating risk as the private operator would assume full responsibility for funding and managing the service.
- King County would be afforded the opportunity to take full advantage of the private operator's waterborne transit experience, and would not have to develop in-house marine expertise.
- King County could participate in service planning and have the ability to underwrite (potentially with other municipal partners), services and facilities consistent with County objectives.
- King County could protect route ownership if the private operator withdrew and protect the public from a costly process to buy out the private operator's UTC permit.
- This approach might be accomplished within existing King County operating revenues if federal and other local sources were available to support infrastructure development.
- King County and other governmental partners might generate revenue through landing fees that could be used to help repay capital outlay or fund service expansion.
- King County could build partnerships with other municipalities to fund infrastructure and support service levels needed by the region.
- King County could exercise decision-making at the local level rather than rely on the state for establishing service levels for its residents.

4.2.2 DISADVANTAGES

- If King County were to make a commitment to the provision of waterborne transit, it may find itself locked into maintaining service if the private operator shut down due to financial hardship.
- It may require a subsidy by the County to fund capital or operating costs.
- Without access to public resources for landside infrastructure, the probability of a successful service would be reduced.
- New county revenue would be required if it is decided that the rider should not bear the full costs of operation of any or all routes.
- This approach might result in an unrecoverable public investment if the private operator shut down.
- King County may have limited ability to control the quality of service.

4.2.3 KEY ISSUES, IMPLICATIONS AND IMPACTS FOR KING COUNTY

King County should consider this option if a waterborne transit route(s) is determined to have significant ridership demand and economic viability. Unlike the previous option, this option assumes the private sector will not have the ability to capitalize the new service. It does assume that a private provider sees the potential for an economic return and that potential provides the incentive for their participation. The joint development agreement terms should not be designed as merely means to provide operating subsidies to the private sector. It is assumed the private sector will likely utilize all farebox and any related concessionaire income to cover direct operational costs. Although the experience of Washington State Ferries, the region's second largest transit service, has yielded little success in generating concessionaire revenue, private operators have found that concession income can make a contribution to their profitability. While public support for shore side facilities is essential in this option, some routes may be profitable to the point where the capital costs of the vessel can be borne by the private sector.

The decision framework associated with this option is very flexible and, executed through the joint agreement, a contractually binding instrument. The contractual agreement is typically based upon the assumption of the potential for a traffic demand and fare level that can support the direct operations of the waterborne transit. By placing the responsibility for operational funding on the private partner, King County is able to greatly reduce its fiscal commitment. The question of capitalization and how it will be financed becomes the major issue for the governmental partner(s) and the private operator to resolve. In order to establish a waterborne transit service, two major assets need to be put into place: functioning terminals and suitable vessel(s). The strength of the private sector is associated with the vessel component of the service. Their ability to establish new terminal options is more limited. Regulatory and shoreline requirements make terminal construction challenging in the best of conditions. Political support is critical to siting a new terminal.

Should King County promote a waterborne transit service through a public/private joint development, the county should focus on the provision of adequate terminals to support a given route. Currently, King County does not own any terminals suitable to support passenger-only vessels. If the private operator cannot capitalize the vessel costs through the farebox, the county would have to cover this capital expense as well. In this case, the county could acquire vessels through purchase, lease, or by paying the private operator for a share of the vessel costs. King County could gain federal grant support for capital funding. The new federal transportation bill

passed by Congress has expanded the nationwide commitment to ferry transportation services. There is keen competition for these funds from Washington State Ferries, Kitsap Transit, and other public operators throughout the country. King County Metro has an opportunity, as it is part of the same regional network of service providers, to compete for these funds. If new funding is not generated, all waterborne transit capital funding comes at the expense of Metro or other regional and state transit providers. The new waterborne transit ridership may also increase the federal transit allocation to the urban RTPO service area, another source of income for program development.

If profitable market conditions truly exist (adequate traffic demand willing to pay a sufficient fare to cover operational costs), this is the most attractive option for establishing a waterborne transit service. The viability of each proposed route will need to be analyzed. The capital costs associated with this option will be borne by eligible public funding sources. It is assumed that this will not have a major impact on the other capital requirements of King County Metro. The public / private joint development option is feasible only when the market demand for the waterborne service is strong enough to generate a profit to private operators. In the event it is clear that operational costs cannot be recovered at a market feasible fare level, consideration should be given to the next two options.

4.3 Option 3 – Public Ownership with Contracted Operations

In this context, public ownership with contracted operations would expand the mission of King County Metro to include the provision of waterborne transit services. The role of the private sector, established through a contractual relationship with King County Metro, would be limited to vessel and terminal operations. This option would require public funding for part of the operational expenses and the capital components of the waterborne transit service.

Other public entities could partner with King County to assist with terminal provision and service funding. There is also a variation of this approach where another public agency manages the service, with King County as a funding partner.

4.3.1 ADVANTAGES

- By assuming ownership of the service, King County would control the level and quality of service, as well as determine cost recovery rates and set fares.
- King County would be afforded the opportunity to take full advantage of the experience private operators bring to waterborne transit.
- King County could build partnerships with other municipalities to fund infrastructure and support service levels.

4.3.2 DISADVANTAGES

- King County would be committed to the provision of waterborne transit, and the County (potentially with other governmental partners) would assume full responsibility for all capital and operating costs.
- New revenue sources would be required to fund capital investment and operations.

4.3.3 KEY ISSUES, IMPLICATIONS AND IMPACTS FOR KING COUNTY

King County has extensive experience with the application of this concept to transit and other services. Because the operational expertise of marine service delivery is not resident in the existing transit agency, this option affords a good opportunity to marry the strengths of the public and with existing private sector expertise. With the public ownership with contracted operation model, the actual service levels (frequency and duration of day) become a public policy decision, not a matter of market demand. The operational costs no longer drive the fare level, which would be set by the King County Council.

This option might be employed on a route that is deemed to fall within the county's transportation responsibility but cannot be sustained on user fees or fares alone. This option might be used in those circumstances where adequate land transit options do not exist. In establishing and operating a waterborne transit service, King County would simply be applying a new technology to meet their existing service commitments.

In 2003, the state legislature passed legislation giving counties with a boundary on Puget Sound and a population over one million the authority to create a new district in all or part of the county to fund waterborne transit service. Kitsap Transit sought authority to fund passenger ferry service to fill the void caused by Washington State Ferries decision to get out of the passenger-only business. The legislative extension to King County was promoted by legislators representing Vashon Island. The legislation authorized King County to impose an ad valorem tax of up to 75 cents per thousand dollars of assessed value on real property. Vashon Island is not an area that generates sales tax, and other normal transportation tax sources are not Island specific. The property tax was seen as the most viable source of revenue.

Although the county is authorized to levy 75 cents per thousand, King County faces a difficult decision in determining if a ferry district should be created to impose any or all of the authorized tax. Adding to the complexity is the recent and continuing creation of special transportation districts with their various revenue sources. A 75 cents per thousand tax is estimated to generate about $1.4 million on Vashon Island, a dollar amount that might afford the opportunity to cover any operational shortfalls of a newly established waterborne transit route to Downtown Seattle. It should be noted that the imposition of the full amount of the levy will impact other taxing authorities that serve Vashon Island and may not be appropriate. Any excess money could be applied to capital needs. However, the question of a suitable terminal at Vashon and Seattle, as well as related vessel costs, would also have to be considered.

If King County provides waterborne transit service beyond what a "fee for service" would support, this is the logical option. Given the likely magnitude of the service to be provided and related staffing needs, there is little incentive to develop the in-house expertise to operate a marine waterborne transit service. Contracting with the private sector for the operational responsibilities is a logical choice. One variation on this option, which King County should review, is the opportunity to contract with other public transit providers that are involved in the provision of waterborne services. The creation of a new ferry district limited to Vashon Island should only be considered if the need to serve Vashon Island by waterborne transit service is clearly established.

4.4 Option 4 – Public Ownership and Operation

Public ownership and operations would increase the role of King County Metro to include the direct provision of waterborne transit service. King County Metro would utilize in-house staff to operate the vessels and terminals. Public partners could still potentially contribute terminal access or funding, but there would be little to no private involvement in service delivery.

4.4.1 ADVANTAGES

- By assuming ownership of the service, King County would control the level and quality of service.
- King County would determine cost recovery rates and set fares.
- King County could build partnerships with other municipalities to fund infrastructure and provide service.

4.4.2 DISADVANTAGES

- King County would increase its operating risk by taking full responsibility for a line of business that is outside of its current expertise.
- King County may incur additional costs by assuming all program administration and management functions.
- King County would assume full responsibility for all capital and operating costs, including significant start-up cost for vessels, terminals, maintenance facilities, and other capital elements.
- New revenue sources would be required to fund capital investment and operations.

4.4.3 KEY ISSUES, IMPLICATIONS AND IMPACTS FOR KING COUNTY

Until just recently, public ownership and operation has dominated the provision of waterborne transit service within Puget Sound. It was expected that the State Ferry System would provide east-west cross Puget Sound passenger-only services leaving small connector routes, such as Port Orchard to Bremerton, to the private sector. King County did not need to consider the direct provision of waterborne transit service. Recent events such as the destabilizing impact of I-695 to WSF's funding have somewhat changed the equation and the private sector, with the support of Kitsap Transit has entered the Puget Sound market. While arguably King County has the ability, with sufficient lead time, to establish a total in-house waterborne transit program, the incentives to do so may not outweigh the disadvantages.

Public ownership and operation is the least feasible option for King County and should only be considered in the event the other options are not viable. Currently, the number of private waterborne service providers is sufficient to ensure a competitive environment for contracts advertised by King County. If this were to change, it might suggest a reexamination of the feasibility of the public ownership and operation model.

5. SUMMARY

The appropriateness of a given service delivery option for a specific waterborne transit service is highly dependent on the particulars of the market, route, and the operating environment. That said, certain level of general analysis can be done of the appropriateness of different service delivery options for application in King County. This section compares the potential applicability of the four service delivery options.

Private Operation with Public Endorsement would place minimal demands on King County, but would also give minimal control to King County. This service delivery system would be most suitable in situations were King County was supportive of the creation of a waterborne transit service, but felt no commitment or obligation to ensure that such a service was provided.

Public Private Joint Development is often considered the best of both worlds. Public capital investment – funds for which can be secured from state or federal grants, bonds, taxes, or other funding mechanisms only available to public entities – can lower the financial barriers for private operators enough to make a service viable. Private operation removes the operating costs and risks from the public entity. However, most operating decisions are also removed from the public partner, leaving the public partner with little control over the service. King County might increase its influence over service decisions if King County were willing to underwrite or subsidize a portion of the service provided by the private operator. In this way, King County would be able to retain nearly all of the advantages of the public-private model, including protection from overall responsibility for program cost and operation, while still maintaining a role in service planning. The private operator would be free to operate the service in a manner that would yield an acceptable rate of return on the operator's investment. Public Private Joint Development would be most appropriate in situations where the level and type of service that a private operator could make profitable were compatible with King County's goals for the service.

Public Ownership with Contracted Operations would provide King County with a much higher level of control over the proposed service. As with a Public Private Joint Development, King County would be able to take advantage of the marine experience of a private operator. However, all operating costs would be the responsibility of King County and its public partners. New revenue sources, in excess of fare revenue, would most likely be required to cover operating costs. Public Ownership with Contracted Operations would be most appropriate in situations where King County wanted control over service characteristics, such as schedules and fares, but did not want to acquire the expertise necessary to operate a passenger ferry service.

Public Ownership and Operation shares a similar level of control over the proposed service, and incurs the same need to generate new operating revenue sources, as Public Ownership with Contracted Operations. However, in-house operation would require King County Metro to take full responsibility for a type of service that is currently outside its expertise. As was evident from the interviews of ferry operators conducted in Task 2, public ownership and operation of small systems is rare in the ferry industry. Of the eight agencies and operators interviewed, only those with the largest systems had, or are considering, public ownership and operation. Public Ownership and Operation would primarily be appropriate in two situations: if King County chose to provide service on a route for which it could not find a private partner or contractor, or if the number of routes in King County passed a critical mass that would justify centralized public operation with all accompanying administrative and support services.

APPENDIX A

PASSENGER FERRY REVENUE SOURCES

Passenger Ferry Revenue Sources
(Excluding Private Subsidy and State or Federal Grant Revenues)

KING COUNTY - COUNTY PUBLIC TRANSIT AUTHORITY (RCW 36.57)

The primary tax form of non grant revenue available to county transit authorities is the sales and use tax. Fares and other fees such as advertising and concession fees make up the remainder of non-grant transit revenue.

- Sales and Use Tax (RCW 82.14.045)
    - King County might utilize existing sales and use tax authority. However this is limited to the remaining available tenth of a percent and might be subject to the Council's current regional transit growth allocation formula.
    - A public vote would be required to levy an increase in the sales and use tax.
    - KC might consider requesting statutory authority to use up to four tenths of one percent of the new sales and four tenths of one percent of MVET tax which was granted to PTBAs for passenger ferry service in HB 1853 now RCW 82.80.130.
- Fares and fees
    - Establishing a fare level for waterborne transit might take into account demand, target cost recovery goals, availability of general tax revenues and other county goals such as congestion reduction and air quality improvement.
    - Fare levels are set by the County Council and do not require a public vote
    - Fees charged for advertising and other non fare revenues are established by King County Metro.

FERRY DISTRICT WITHIN THE COUNTY TRANSPORTATION AUTHORITY (RCW 36.54.110 TO RCW 36.54.190)

In 2003, HB 1853 amended the statues on county owned ferries to allow counties of over one million population having a boundary on the Puget Sound to adopt an ordinance creating a ferry district in all or a portion of the county. Such ferry districts are limited to providing passenger-only ferry service (RCW 36.54.110). Also included in HB 1853 was the authority to levy taxes for passenger ferry service though an ad valorem tax on all taxable property in the ferry district.

- Ad valorem property tax
    - The property tax is not to exceed 75 cents per thousand on assessed valuation for passenger-only ferry services (RCW 36.54.130). The predicted yields on the ad valorem property tax at various levy rates are displayed in Exhibit 2-2 of the Operating, Financing & Partnership Options Technical Memorandum.
    - Does not require a public vote
    - During deliberations on ESHB 1384, it was estimated that about $1.4 M would be raised with the $0.75 per thousand on a Vashon Island ferry district.

- Fare and fees
    - Fare levels are set by the County Council and do not require a public vote
    - Fees charged for advertising and other non fare revenues are established by King County Metro.

PUBLIC TRANSPORTATION BENEFIT AREAS (PTBA) (RCW 36.57A AND 36.57A.210)

In 2003, HB 1853 amended the statutes for PTBAs to allow a PTBA having a boundary on the Puget Sound to provide passenger-only ferry service once a passenger-only ferry investment plan was developed. As part of the investment plan, the PTBA may recommend a number of revenue sources including motor vehicle excise, sales and use tax, tolls and fees. The passenger ferry revenue sources granted to PTBAs are not available to a county transit authority such as King County. As noted above, King County might consider seeking an amendment to the existing county transit statutes to allow county owned passenger ferry systems access to the MVET and sales taxes available to PTBAs. HB 1853 established the following type and level of taxing authority to PTBAs for passenger ferry service.

- Motor Vehicle Excise Tax (RCW 82.80.130)
    - Up to four tenths of one percent of motor vehicle excise tax collected within the PTBA can be used to support passenger ferry service.
    - Levy of the MVET tax requires a public vote to approve both the passenger ferry investment plan and to set the MVET tax rate.
- Sales and Use Tax (RCW82.14.440)
    - Up to four tenths of one percent of sales and use tax collected within the PTBA can be dedicated to passenger ferry service.
    - Levy of an increase in the sales and use tax requires a public vote to approve both the passenger ferry investment plan and the sales and use tax rate.
- Fares and fees
    - Passenger ferry fares are established by the PTBA Board of Commissioners.

OTHER MUNICIPAL REVENUE SOURCES

PORT DISTRICTS (RCW Title 53)

Port Districts are authorized for a wide range of purposes related to acquisition, construction, maintenance, operation and regulation of harbor improvements, water, rail and air terminals and facilities; and tourism and economic development. Although the primary form of tax revenue appears to be taxation of property within the port district, other revenue sources such as special assessments within local improvement districts are also available. A wide range of user fees are also available to port districts.

- King County might explore opportunities to partner with the Port of Seattle around development of terminal facilities.

- Ports are granted authority to operate passenger carrying vessels although this appears to be limited to navigable rivers within Washington and intrastate waters of adjoining states. This point may not be directly relevant to the current study scope. Maybe it should be deleted.

CITIES

Like port districts, cities may have a range of revenue sources available to support terminal development, vessel acquisition and even subsidy of waterborne transit operations.

- King County might explore opportunities to partner with those cities that are interested in waterborne transit service to and from their city.

APPENDIX B

MARCH 2005 STAKEHOLDER MEETINGS SUMMARY

WATERBORNE TRANSIT POLICY STUDY

MARCH 2005 STAKEHOLDER MEETINGS SUMMARY

King County Metro Transit held two stakeholder meetings in March 2005 to provide an overview of the Waterborne Transit Policy Study and solicit stakeholder feedback. The purpose of the meetings was to ensure that the Waterborne Transit Policy Study identifies the range of options that stakeholders believe should be considered relating to decision-making criteria; funding & financing; vessels, terminals, and operations.

Meeting invitations were sent to approximately 250 community members who might have an interest in the waterborne transit policy study. If unable to attend, invitees were encouraged to invite others from their organizations or agencies to attend. Approximately 60 people attended, representing the maritime industry, waterfront communities in King County, and agencies and organizations dealing with transportation issues.

The meeting began with a statement of the purpose of the Waterborne Transit Policy Study: to determine the conditions and circumstances under which it may be appropriate for King County to invest or participate in waterborne transit. After a review of the study milestones and activities, participants met in breakout sessions to discuss: decision-making criteria; funding and financing; and vessels, terminals and operations. All participants' ideas were listed as options or issues to be addressed in the policy study.

A full record of the breakout sessions, as well as additional comments received (4) is attached. Following is a summary of the themes and key issues from the stakeholder discussions.

Decision-making Criteria

What should be the primary market focus of a county investment in waterborne transit? Secondary focus?
What criteria should the county consider when deciding whether to offer or subsidize passenger ferry service? Would there be different criteria depending on the market focus?

Some meeting participants identified particular market segments geographically, e.g., Vashon Island, West Seattle, Des Moines or Lake Union while others viewed markets according to use, such as commuting, tourism and/or non-work trips. Some saw waterborne transit as primarily filling gaps in overall transit service. Some cautioned against allowing commuter concerns to dominate all decisions about the system, noting that a key focus for waterborne transit ought to be tourism and economic development.

Many talked about the need to measure actual demand for waterborne transit, recommending further research such as origin-destination studies and evaluation of other, existing ferry systems.

Several raised environmental concerns, and the need for any waterborne transit system to promote favorable growth. Many pointed to the value of waterborne transit as an alternative mode of transportation during road construction and for emergency management.

Comments Relating to Funding & Financing

Should new revenues be raised, or should existing county services be reduced to fund passenger ferries?
If new sources are used, what sources are the best fit for capital costs? For operating costs?

No one spoke in favor of reducing existing county services to fund passenger ferries. Rather, discussion focused on new funding sources, including: user fees, fares, federal grants, special districts, bonding, use of existing facilities, secondary use of ferry for commercial package delivery, and availability of construction mitigation funds.

Another focus of discussion was partnership options, with alternatives ranging from sole operator to public/private partnership to partnership with other public agencies. Some suggested the best funding source for capital costs was public money, whereas operating costs could be funded privately. The need for incentives or subsidies to encourage private investment was also raised.

Many noted the need to weigh the costs and benefits of waterborne transit.

Vessels, Terminals, & Operations

What are the key service and facility attributes needed to make passenger ferries feasible, including vessels, terminals, access to terminals, and service levels?

Vessels

Discussion about vessels focused primarily on the quality of the experience for passengers, such as a fun ride, windows and outside deck for visibility, speed, stability and safety. Amenities mentioned were comfortable seats and tables, restrooms, availability of wireless Internet and phone access, minimal vending machines, and bike storage. Some participants suggested employing business class accommodations on certain routes.

Another line of discussion focused on the mechanical attributes of vessels, including: redundant engines to minimize down time; fuel efficiency to reduce emissions; and noise control both above and below water level.

Terminals

Many meeting participants noted the most important attribute for terminals was that they be tailored to their community, sited within a densely developed activity center, with multi-modal transit connections, ample parking and access for pedestrians.

Discussion also touched on amenities at terminals, including: restrooms; food concessions; real-time travel information; and auxiliary services and retail for commuters and others, either at the terminal or nearby.

Service

Several meeting participants commented that the competitiveness of the service was most important, citing as criteria the capacity of the system, consistency and coverage of service, and door-to-door travel time. Participants also agreed that service quality should be considered for both commuter, non-work and tourist markets.

APPENDIX C

STAKEHOLDER MEETINGS BREAKOUT SESSION RECORDINGS

WATERBORNE TRANSIT POLICY STUDY

MARCH 2005 STAKEHOLDER MEETINGS SUMMARY
BREAKOUT SESSION RECORDINGS

Decision-making Criteria

***** *Indicates that some break-out groups designated, with an asterisk, the item in question as a high priority*

Comments about markets

- Analyze gaps in the transit to find good locations for waterborne transit (WBT)
- Combine markets
- Concern about "cannibalizing" transit ridership, but should think as broadly as possible
- Different market potential and economics on different routes
- Focus on cross-sound waterborne markets that are not being served. Assess deficiencies (*)
- Historically these already exist
- Markets:
- Routes may define market/need
- Seattle waterfront is proven market
- South Lake Union
- Water taxi shows that both commuter and tourist markets exist
- What land use to serve? (*)
- Why would people choose waterborne transit?

Comments about origins/destinations

- 8% vehicle traffic on ferries are to/from Sea-Tac airport
- Big market from S. Kitsap
- Bigger issue than cross-sound – need to find ways to bring people into South Lake Union
- Destinations (where are "flows" across water?): S. King, Gig Harbor, Vashon, SeaTac
- Do not be Seattle-centric
- Dock location drives everything
- Identify groups/markets and destination points
- Island residents first priority – no other option
- Next tier – service to cities where other options exist

- Perform Origin-Destination study, how many destinations within ¼ mile of transit (bus/rail)? (*)
- Terminals are most important piece of infrastructure
- Vashon route to Kitsap?

Comments about non-work uses

- King County should be responsible for commuter market
- Special event – demo
- Vashon would like to be able to use ferries for non-work trips

Comments about connections

- Connecting modes is vital (*)
- Coordinate bus schedules with ferry arrivals/departures (*)
- Criteria – Pedestrian access to terminal (*)
- Des Moines is well located in relation to Sea-Tac airport
- Every transfer – car/bus, bus/ferry, reduces usage
- Just like bus service – only water (requires transfer)
- Key market is circulation within the city (of Seattle)
- New or improved connections between centers
- To increase patronage, we must improve connectivity with land based modes
- Viaduct replacement is perfect opportunity to create better connectivity between waterborne transit and land based transportation (*)
- Waterfront coordination is a requirement

Comments about demand

- Based on demand/markets served?
- Congestion-reliever or new, un-served market
- Lack of demand data. Needs to be quantified. County should do survey research.
- Longer-term timeline
- Ridership (but you don't know ridership until the service starts) (demand*)
- Service will create demand. Listen to political input
- We have fallen so far behind that other solutions are needed
- What are service levels?
- What is the service "gap" we are trying to fill? (*)
- Need
- Need?

Comments about density and growth management

- Available land-side sites
- Environment impacts – land-side issues/rowing
- Most productive would be high density
- Old industrial areas are preferred
- Promote density/growth management (*)
- Quality of life is important consideration

- Reduction in traffic helps businesses move goods
- Vashon – Love POF (passenger only ferries) service, but want to avoid growth impacts

Comments relating to jurisdictions and partnerships

- 37% Pop. in south King County
- Competition should be restricted to protect revenue (*)
- County should give up authority over transit to a Regional Authority (or County becomes this)
- Don't create two agencies!
- Exert influence in region to make it happen!
- High-cost of waterfront – share access
- How King County feeds/service to private operator?
- How waterborne transit will impact current water users
- Jurisdictions
- King County is logical authority for bus connectivity
- Need one jurisdiction to have ability to coordinate modes
- Participation by others – partnership
- Political will
- Private handles other markets (make $)
- Private sector
- What is role of waterborne transit in King County?
- WSF (Washington State Ferries) – welcomes other to look into ferry business. WSF has no agency position

Other examples

- Most San Francisco ferries are post-1989 (earthquake)
- On Lake Union – model is Victoria where they have water transit service
- Review historic routes
- Study San Francisco bay area waterborne transit
- Talk to WSF (Washington State Ferries), people who have been providing POF (passenger only ferries). Industry can tell a lot. Passenger market is very different from auto ferry users

Comments about added value

- Added value – emergency management
- Allows more local service
- Construction mitigation. Alaskan Way Viaduct, Mercer, SR 520, I405, I5, etc.
- Key linkage between funding/decision-making is tie-in with construction mitigation
- Want system in place that can move emergency workers if highways and bridges are compromised (emergency)

Other comments

- Improve education on water transport rules
- Improved marketing
- Must identify this first
- Near to ferry terminals
- Waterborne transit would provide an amenity and help provide identity for the region. These amenities, 'positive externalities' should be considered. Benefits to tourism as economic development should also be considered, including in-city tourism and leisure. Commuter concerns should not dominate.

Funding and Fianancing

Suggestions about funding sources

- #1 – user fees/fares
- Boat license fee?
- CMAQ funds? Job access, reverse commute?
- Concession/advertising is an important revenue stream (*)
- Funding flexibility for routes – mix & match
- If no subsidy, fares would limit use
- Let communities be involved in service decisions/funding
- Local improvement districts
- Natural county role/function
- Need contingency in case state funding goes away – i.e. ferries provides passenger service, but this could quickly change so shouldn't be dependent on this
- Need new revenue
- Potential non-fare revenue sources (think up-front)
- T-21 – Federal grant (vessel funding)
- Tax increment financing
- Taxation district focusing on employers
- Temporary or long-term issue?
- Use King County bonding to fund terminals
- I didn't bring it because I thought about it after the fact – but what about a freight component? An ability of these boats to haul small packages across the sound.

Comments about incentives or subsidies

- Easing regulations to encourage private operators
- Fare subsidy is probably needed (Bay area operators don't require subsidy)
- Incentives to private companies
- Possible business subsidy
- Tourist market helps subsidize transit function (some discussion on this)

Comments about possibility of mitigation funds

- Construction mitigation (*)
- Construction mitigation could provide capital/operating dollars

Comments about partnerships

- Consider public partners (cities)
- Private sector operators
- Public/private partnerships
- Renton – interested in service (long term plan). Port Quendall and North Renton face redevelopment, emerging demand (Boeing)
- Seattle Ferry Service – has plan for three South Lake Union routes
- Terminals op/funded by public & Vessels op/funded by private
- What is County, State, local responsibility
- No interest in public operations or Washington State Department of Transportation, Port of Seattle bonding

- Port financing – explore in study
- Tap into Washington State Ferries expertise and existing infrastructure
- What's working: Transit agencies get infrastructure, grants. Private: Vessel capital, operating (Kingston example). There may be some tax credits offered by Kitsap Transit

Other comments

- Let market determine business models
- Ease and flexibility of shifting terminals – routes
- Can Washington State Ferries increase passenger service
- Existing facilities – utilize (*)
- Secondary markets: everything else - commerce is primary
- Special events are a secondary market (special events)
- Tradeoffs – if Vashon POF (passenger only ferries) went away, more bus costs to Fauntleroy
- Transit-oriented development concept at terminal
- UTC regulations limit flexibility. If regulations were relaxed, could adapt to market
- Cost benefit (*)
- Cost issue – Union vs. non
- Water-transit infrastructure is less expensive (costs)

Vessels, Terminals and Operations

Vessel Attributes

Comments relating to amenities on the vessels

- Ask passenger-only current riders
- Cabin/comfortable seating/restrooms/Internet/etc. all depend on length of ride and public vs. private - also food service

- Comfort – depends on travel time – also includes seating/heat/room
- Comfort is relative to length of trip – longer trip needs more amenities – shorter trip needs less
- Customized vessel for individual Routes vs. Standardized less costly
- Food service less important on boat if at terminals (vending machines okay on boat)
- Tables (they take no more space)
- Wireless service for passengers – both Internet and phone (more important on longer trips)
- Bicycle storage capacity
- Bike storage is important but also provide terminal bike lockers

Comments relating to the quality of experience for passengers on the vessel

- Business class accommodations
- Fun ride
- Good visibility (lots of windows) is important
- Outside deck - highly desirable option
- Safety on boat and off
- Smooth ride is important and depends on the route. I.e., Lake Washington vs. Puget Sound/open water
- Stability
- Visibility
- Speed
- Fast – should be competitive with other modes. Shorter routes – speed is less important

Comments relating to fuel attributes

- Fuel attributes
- Fuel efficiency
- Newness: helps w/ emissions

Comments relating to mechanical aspects of vessels

- Dual v. quad engines propulsion pkgs. – redundant engines to minimize down time
- Hull design
- Low wake/low emissions and quiet – depends on the route
- Noise: airborne, underwater, passenger
- Tier II 2007 standards
- Wakes
- Weight

Terminal Attributes

Comments relating to amenities at terminals

- At least/at a minimum provide a roof/overhead cover
- Concessions – other than espresso stand not important
- Real time schedule info
- Real time schedule information
- Restrooms – depends on terminal size (public vs. private)
- Retail space
- Services for commuters at or near terminal (e.g., dry cleaning)

Comments relating to design of terminals

- Design attributes – aesthetics very important
- Green design – not essential to operation
- Green design: speaks to who we are
- Make terminals a place for people to experience waterfront
- Safety – crime prevention through environmental design
- Security unobtrusive
- Terminal designs should meet ADA (American with Disabilities Act) regulations

Comments relating to access

- Access for all modes
- Transitions between other connections/modes – agency cooperation in station/terminal designs
- Where? Destination, parking, or transit access

Comments relating to terminals' impact on their community
- Coordination w/ landside necessary
- Density of development needed at terminal sites
- Designed to fit into local community – also where to provide parking so as to not impact local streets
- Enclosed waiting areas may attract non-riders – may need to include designs to discourage such use
- no long-term parking
- No new terminals? – because difficult to get approved
- Potential negative impact to terminal neighborhood
- Tailor to community
- Terminal should be located near/at major destinations/activity centers

Comments relating to non-transportation-related uses for terminals
- Terminals as tourist destinations
- Way of finding tourist information – not as important as focus is on commuters

Service Attributes

Comments relating to competitiveness of service
- Competitiveness - Relative price
- Competitiveness w/ other modes
- Travel time
- Travel time – also depends on options available at terminals – i.e. connections
- Cost: time comparison to other modes including car

Comments relating to importance of connections
- Good connecting transit service at terminal – multimodal connections
- Intermodal connections – very important
- Regional connections
- Intermodal connections

Comments relating to consistency & coverage of service
- Consistency/reliability of service
- Span of service – (Private is focused on peak periods only) – due to limited funding

Comments relating to capacity of service
- Capacity = seats X trips
- Capacity of system

Comments relating to limitations on service

- Lake Union 7 knot limit
- Wakes: safety
- Conflicts with other vessels
- non-motorized watercraft conflicts (Argosy good resource, probably)

Comments relating to markets for service

- Charter services
- Location of route
- Multiple markets served
- It is important that there be a diversity of ferry services/types. Commuter services are important, AND tourist services are important and both should be provided.

Other comments about service

- Friendly/professional service by staff
- Shared pass
- If private operators are getting started, why is the public sector bothering
- Public and private may both start peak-only
- Public subsidy of private operation
- Parking for users
- Identity of our region (green design, waterfront access, etc.)